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ON HUMAN HAIR AS A RACE-CHARACTER, EXAMINED
BY THE AID OF THE MICROSCOPE.

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PRELIMINARY OBSERVATIONS.

FROM the highest antiquity has the human hair attracted the attention of observers; but, down to a very recent period, it was merely the contour and the external aspect which were taken into consideration. These two characters were thus at all times indicated as distinguishing nations and individuals. The terms *λειότριχες, συλότριχες, ξανθοί, πυρροί*, etc., constantly occur in Greek authors and their successors.

Modern science has somewhat enlarged the field of observation as regards colour; but it was only by the use of the microscope that we are enabled to add fresh characters to those accessible to the naked eye. It is by these means that Heusinger was enabled to indicate the elliptic form of the hair of the Negro. Koelliker confirmed this observation, and added other characters. Erdl applied the microscope to the study of the colour in animals. Brown finally, according to the tendency of the American school, published in the remarkable work of Schoolcraft, his researches, in which he endeavours to establish specific characters, or nearly so, for the hair of the Aryan, the Negro, the Chinese, and the American, both in the form of the bulb and the body, and also in the structure of the latter, at least as regards the presence or the absence of the so-called medullary canal.

This question has for many years excited my warmest interest.

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What, an anatomical system at present considered merely as a secretion of the skin, or at any rate as a simple appendage, should this represent clearly defined distinctive characters in the races of man inhabiting the globe? What, a single hair sufficient finally to distinguish one stock from another? At first, this seemed to me absolutely impossible. Nevertheless, on turning our attention to the animal kingdom as a whole, and specially to the vertebrate animals, the variety and importance of these appendages become incontestable at once. In fishes and amphibia they assume the form of scales; that of feathers in birds; and even in certain mammals prickles are substituted for fleece. The felt of wild animals presents some distinct and constant characters in colour, texture, and distribution. In man, excepting some regions, as the face (in the male), the armpits, the pubes, etc., the surface presents generally only the rudiments of the fleece of animals; it is the hair of the head which distinguishes man in this respect.

I do not enter in this paper into the minute or elementary structure of the human hair. In this respect man differs no more from the animal than in the other organic systems, as regards their ultimate elements; hence there can obtain no difference between human races. But, as we shall presently see, there is a great difference in the conformation of the bulb or the body, as seen in transverse sections; and such there is also in the relative volume, the disposition and the contents of the medullary canal, which may even be absent. These characters can only be studied by the aid of the microscope. I have thought it proper microscopically to examine also the down on different regions of the body in individuals belonging to our race; the apes also, specially the anthropoids, seemed to me to deserve a place in this investigation:

I take this opportunity to return my sincere thanks to those honourable *savants* who have furnished me with samples of hair for microscopic examination. Without the kind aid of Messrs. Quatrefages, E. Rousseau, de Montagu, d'Abbadie, l'Abbé Domeneck, E. Duhouset, and Potteau, this unpretending treatise would probably never have seen the light.

I sincerely regret that, for certain races which inhabited or still inhabit North America and High Asia, I had no materials at hand. I would, however, fain believe that the varied forms of human hair are all represented by the samples I had at my disposal, and that, consequently, those peoples I was compelled to omit may be ranged by the side of such made known in these researches.

II. THE EXTERNAL CHARACTERS OF HUMAN HAIR AS SEEN BY
THE NAKED EYE.

The hair of the races of man presents, at first sight, very striking peculiarities in regard to its length, abundance, colour, and its smooth, curly, frizzled, crisp, or woolly condition, quite apart from the grotesque forms given to it by artificial practices which are met with both among the most civilised and the most savage peoples. This fact shows the importance which man instinctively and voluntarily has everywhere attached to that ornament which decks his head and frames his face, the noblest parts of his body.

We shall now examine the extreme variation of the characters visible to the naked eye. As regards the length of the hair, what a contrast between the stiff and sleek hair of the Blackfeet and the Sioux,* which almost reaches the heel, and the twisted tufts of the Negress and the Bosjesman, which scarcely reach the shoulder! We must take note, that the length of the hair greatly differs in the two sexes of the same stock; its length also varies so much in the same race, and even in the same families, that it is unnecessary to dwell on this character. We possess, moreover, no certain data in this respect; but, at all events, we must, to some extent, attribute the peculiarity both to the influence of climate and aliment.

The abundance of hair is subject to so many individual variations, that it cannot form a really distinctive character. As a general rule, the finer and more supple the hair, the greater the number of hairs in a given space. On this point, we need merely to compare the head of the Negro with that of an American.

The colour of the hair has at all times fixed the attention of travellers and authors. On the one hand, it harmonises to a certain degree with the colour of the skin and the iris; and, on the other, it presents more or less persistence, according to race. Black hair is met with in nearly all parts of the globe—under the equator, the pole, as well as in the temperate zone. It is the appanage of the Esquimaux, as well as that of the Negro, the Hindoo, the Malay, and of many European nations. Such is not the case in regard to the other extreme of the chromatic scale; viz. the light hair, with its nearly imperceptible shades between flaxen, straw, and gold colour, to which we must add carroty and fiery red hair. From this last there is a transition to reddish-brown; from this to light brown, dark brown,

* The hair of the mummies of the Aymarás of Peru is also distinguished by its length and stiffness.

or chestnut, etc. Among these innumerable shades, the light hair belongs to but few races, which chiefly inhabit Europe; such as the Germanic branches, Slaves and Celts of the Aryan stock, and the Finnish branch of the Turanian stock. Some light haired individuals are found among other peoples; as among the Armenians, who are partly of Aryan origin, the Semitics of Syria, among the Jews, and perhaps in Africa among the Berbers of the Atlas.* The red hair, on the contrary, seems represented, at least by some individuals, in all known races, whether equatorial or boreal. Whilst the red colour forms on the one hand, as it were, a bond of union between the most distinct races, the brown colour may be considered as establishing the transition between the light and the darkest shade. In point of fact, there are, excepting the Negroes, few black haired races among whom there are not many instances of brown hair, approaching more or less the red. This applies both to the inhabitants of the highest north, as to the Polynesian islanders, to the Americans, as well as to the Turanians, etc.

The inhabitants of Africa, exclusive of the northern coast, present few variations in the colour of the hair. This is also the case in America, where black and brown predominate. Some rare exceptions in Peru and among the Mandans deserve notice. As regards the Peruvians, we have as yet no right to discard the idea of intermixture; and as to some Mandans with light and silvery hair, living in subterraneous cabins, they always appeared to me to owe that peculiarity to a partial leucosis. Oceania resembles in this respect America, presenting the same colours, and probably less exceptions. It is different in Asia; but there also must the black and brown be considered as the most prevalent colours, excepting on some spots in the high table lands of the Himalaya, and specially in the west of that continent, where the juxtaposition or the intermixture of different races present samples of all shades of hair, as we find in Europe, here and there. It is the Aryan race in its numerous ramifications which inhabits these regions, and which presents, besides all the cranial forms, also all shades in the hair, from the jet black hair of the Hindoo to the pale yellow of the German or the Slavonian.

* Among the Berbers, I have hitherto only found that ash-grey colour, which is also met with among other allophyletic nations in Arabia, Egypt, among the Turks, etc. It must, moreover, be borne in mind, that the use of lie-wash, of powders and ointments, produces an artificial colour of the hair. I have seen all kinds of shades, from a fiery red to a silvery white, produced by these means. Just as originally dark hair may become discoloured by such means, so may it, *vice versa*, appear black, as I found in a wig from the Fiji islands. A thick black powder encrusted the circumference of each hair, and the original brown colour could only be seen after repeated washings.

From what precedes, we arrive at the conclusion that the colour of the hair alone is insufficient to characterise a race; for we have seen that the same colour—black, for instance—is the appanage of almost all the great groups of mankind, and that all shades may be met with in one and the same race. It is this last circumstance which must be taken in account in considering the question whether the colour of hair in a race may change in time and a different climate. Though numerous documents seem to refute the idea of a change, I must ask how we can explain the great variety of colour in the Aryan family, supposed to have descended from one stock; I, moreover, must appeal to daily observation. How many children with fair or reddish hair do not at puberty have it changed into nut-brown! A change in a contrary direction, that is to say from dark to light (apart from the gradual change to white by age), is rare, though not absolutely impossible. The variegated colour of the hair of an individual, and even in a single hair from the bulb to the point, must not be omitted; nor the different colour of the down covering various parts of the same body.

Characters as important as those of colour are deduced from the stiffness, flexibility, straight or frizzled condition of the hair. The hair is *smooth* when the hairs are rectilinear, *curly* when they curve at the extremity, *frizzled* when they form curves in their whole length, and *crisp* when they are disposed in small or large ringlets resembling wool.

Perfectly smooth hair is the appanage of the Americans, the peoples of High Asia, China, Japan, Malasia, etc. It is less common in Europe, and almost unknown in Africa. Curly hair is more or less found in the Aryan race, among the Semitics, in Polynesia and Australia, and individually also among the races cited above. Frizzled hair is very prevalent in Africa, arising frequently from the commixture of Nigritian blood, as in Egypt, in Abyssinia, amongst the Gallas, etc. It is also sporadically found among the Arabs and the Jews; more rarely among some European Aryans. The crisp hair predominates in Africa among the Negroes, the Hottentots, and in Melanesia.

As regards the latter region we must establish a distinction. Although there are Papuas with very fine hair, separated in tufts, crisp, and approaching that of the Negro and Hottentot, there are others who are '*mop-headed*,' wearing those enormous wigs, of which we possess descriptions and samples, and whose hair is far from representing the characters of the first variety, as we shall show from

microscopic examination. We must here notice that Africa contains peoples possessing similar wigs as the Hadendoas, and that the Cafusos of South America offer another instance of this kind. I have, even in Europe, met with three individuals whose hair had the same aspect; but I had no opportunity of subjecting them to microscopic examination.

The general form which results from the stiffness or flexibility of the hair, appeared to me the most striking and persistent character. There is no Negro without more or less crisp hair; there is no American without hair like a horse-mane, so to say; no Aryan who possesses either of these characteristic hairs on the head. With such a result, furnished by simple inspection, we ask, what is the cause of this diversity? It is for the microscope to answer the question. It will tell us that these differences result from the thickness and the contours of the hair, apart from the various dispositions which characterise the interior of the body of the hair, which will also be revealed to us by the instrument.

One word, on the implantation of the hair on the surface of the integument, before proceeding to microscopic examination. In the great majority of the races of man, the hair issues from its cutaneous envelope in an oblique direction, and the disposition of the hairs and the down presents according to the regions of the head and the body, the aspect of vortices, eccentric and concentric curves. In the Hottentot, the Papuan with crisp hair, and in a great portion of Negro peoples, the hair is implanted perpendicularly*, and disposed in large or small round tufts. The Bosjesman presents, as far as I am aware, the smallest tufts.

III. GENERAL OBSERVATIONS ON THE HAIR EXAMINED BY THE MICROSCOPE IN A LONGITUDINAL DIRECTION.

I distinguish, like all anatomists, in each hair the root and the stem. The first consists of the bulb and the papilla. With regard to the shaft, it is not sufficient to examine it at any point in its length; it is requisite separately to examine the base, and specially the point, which presents certain peculiarities. The elements composing the hair are the epithelium, the cortical or fibrous, and the medullary substance.

1. THE ROOT. The great diversity in aspect exhibited by the hair of different races, leads to the supposition that the root should,

* Is this diversity caused by the great thickness of the scalp in the Nigritian races?

if not in structure, at least in conformation, present some notable differences. And, in fact, I have, in the hair belonging to individuals of different races, found bulbs and roots cylindrical, conical, spindle or club shaped, and others of globular form, or flattened at the base. Contractions and incisions were not wanting. The inferior extremity may be very slender or enlarged, and, in the first case, curved like a hook. I have seen such roots in desiccated hair torn from their follicles.

At the beginning of my researches, I felt inclined to consider the variations in the form of the root as race peculiarities; but, on extending my observations to a number of individuals, I changed my opinion. The reasons why I attach no importance to the form of the bulb are the following. In the first place, I found that individuals of the same race present remarkable differences in the form of the hair-bulb, and, what is more, even the hairs of the same individual show great diversities in this respect. All this may be explained by the metamorphosis of the bulb during its development, and by its gradual atrophy, which accompanies the falling off of the hair. To arrive in this respect at a fair result, we ought to examine the fresh bulbs of sound hair, which I have hitherto had no opportunity of doing.

2. THE SHAFT. The shaft, when subjected to microscopic examination in the direction of its length, presents differences according to the state of its development. For, before attaining its full growth, the hair passes, so to say, through an embryonic stage; and it is noteworthy that the down is abundantly intermingled with the hair in the polar races, as, for instance, in the Esquimaux and Laps.* In this stage the hair is transparent, having in the above races the appearance of a silvered empty tube; for I have never been able to detect the cellular thread which characterises the hair with a medullary substance. Whenever the point of the hair is finely drawn out, it contains a very transparent central canal. In such cases the transverse partitions gradually disappear on approaching the point; even the hair of the Bosjesman and the American possess this character.† It is rare that the portion of the stem contained in the follicle, though transparent, shows a well-defined canal.

* The same condition is observed in animals of the polar regions, in the polar dog.

† When the point of the hair, not being very fine, terminates in a pencil, the tubes composing it are equally transparent. The same thing is observed in the knots which I have seen on the hair of the inhabitants of the Deccan. These knots are bristling with small transparent and diverging tubes. I am inclined to consider these cylindrical and diaphanous cellules as the primitive element of the cortical substance, which changes its form by the juxtaposition in the mass of the stem.

Every hair completely developed, and examined longitudinally by the aid of the microscope, belongs to one of the following classes:—

(a) It presents in its whole tract a central line perfectly diaphanous, with well-defined sides, more or less wide, according to the decreasing or diminishing thickness of the hair. We are involuntarily led to consider the silvery portion a canal without medullary substance. I have employed no reagents to assure myself whether it has a cellular structure; I simply describe what I have seen, without engaging in histological researches. I also ignore whether this canal be empty or whether it contains air, a gaseous or oily fluid. I simply confine myself to describe its presence.

(b) In a second class of hair we perceive a cellular canal positively filled, and with less regular margins than in the first class. It is frequently broken off, and we find in its place a transparent gap, without any medullary substance. This is distinguished from the cortical substance by its tint, which is either darker, as a general rule, or lighter, or has a greyish, smoky aspect, specially in white hair. Thus, in black hair, the medullary substance is brownish when visible; in dark brown hair it is reddish or orange colour; it is of a golden yellow in lighter coloured hair, whether perceived in the whole tract of the hair in the form of a full canal, or whether it merely presents more or less elongated cellular clusters, which usually diminish in thickness towards their extremities.

(c) There is a third class of hair which, apart from the cutaneous extremity and the point, presents nothing in the whole tract indicative that the structure of the centre differs from the rest. There are only here and there seen fine whitish lines which might be taken as interstices situated between the elongated or fibrous cellules which constitute the cortical substance.

In reviewing the human races, and distributing them according to the three categories just established, we place in the first category the Aryan family, and specially its branches with light hair. It is only by way of exception that we find the medullary canal empty and silvery in the light hair of some Berbers, Turks, or ancient Egyptians; and in such cases the origin of the individual might be somewhat doubtful. But even in the Aryan race, the presence of a diaphanous canal is not constant. It is found in most Europeans with light hair, as in Germans, Slavonians, Celts, Frenchmen, Italians, &c. In Ireland the presence of a full canal is found in the hair of some light individuals, and the dark-haired European nations also possess, at least in the thick hairs, a distinct medullary substance, whilst the

finest hairs of the same head have an empty canal. What, therefore, constitutes the rule in the light hair of the Aryans of Europe occurs in our country as an exception in the dark hair of the same race.*

To the second category belong the greater portion of human races, such as the Esquimaux, the Laps, the Americans in general, the Turanians, the Polynesians, the Australians, &c.

The third class comprises the blackest hair. Thus, the Negro, the Papuan, the inhabitants of Southern India, the Malays, &c., possess hair which, examined in a longitudinal direction, present no difference between the cortical and the medullary substance. We should, however, deceive ourselves in deducing from this a general rule as regards these peoples. For, when the hair of a Bosjesman or a Negro is less deep in colour, when it approaches brown or red the medullary substance is seen as distinct as in other races. Besides, though in jet black hair the substance is not visible, we are not justified in concluding that it is altogether absent.

After what has been stated, we attach only a relative value to the preceding classification; for we have just seen that the Aryan race presents in its different branches all the indicated varieties as regards the relations of the central substance to the peripheral. We must, also, bear in mind that the hair of the same individual belongs, according to the degree of its development, or the variety of colour, to either of these categories. I have further observed that the three conditions indicated may be found in the same hair: thus, the point and the inferior extremity of the stem may have a diaphanous centre; the adjoining portions of these parts may have a coloured medullary thread; whilst in the intermediate portion neither of the above conditions exists.

Whilst the inspection of the hair in a longitudinal direction is indispensable for the appreciation of the value of the indicated differences, it is nevertheless insufficient to establish a convenient base of classification. There is another method to attain our object: by subjecting to the microscope the transverse section.

IV. MICROSCOPIC EXAMINATION OF THE TRANSVERSE SECTIONS OF HAIR.

The transverse sections of hair must be as fine as possible. Whenever they are coarsely made, the hair collapses in the direction of its

* The Aryans of Asia, the Persians and Hindoos, for instance, whose hair is very black, belong either to the second or third category; either their hair presents the medullary coloured thread, or nothing particular can be distinguished in the centre.

length, and we then cannot properly estimate its circumference. I used for my observations a small microscope by Oberhaeuser, Flaudin's micrometer, and microtome, very carefully manufactured by Mr. Hartnaek. Without the microtome it seems to me very difficult, if not impossible, to obtain transverse sections sufficiently fine for exact study.

The figures accompanying my description express *hundreds of millimeters*. The transverse section of the hair is sometimes quite circular, but frequently more or less elongated, when two diameters must be indicated. I always place the large diameter before the second, separating them by the mark (:) indicative of their proportion. It must also be borne in mind that the two terms of the proportion express the *absolute dimensions* in hundreds of millimeters.

The transverse sections of the hair enable us to examine the form of their contour, and to establish their different diameters and their thickness by micrometry, as well as to assure ourself of the presence or absence of a medullary substance, and its relation to the cortical substance. By these means the differential characters, if any exist in the human races, may be clearly established.

This portion of my researches being the most important, I have, for the convenience of the reader, adjoined plates. In order to exclude, on my part, any preconceived idea, I abstain from formulating in this place a rigorous classification; for, before classifying, we must ascertain whether the subject admits of it. Nevertheless, in order to proceed methodically, I separate the three great races of man in well-known groups, *e.g.*, as Aryans, whatever their *habitat*; whilst at the same time I comprise such races whose hair presents analogous characters as in Negroes and certain Papuans.

Before entering into any details, I must offer some remarks, in order to avoid repetition. Hairs plucked from the same head always differ in thickness, sometimes in colour as well as in the presence or absence of the medullary substance, and its relations to the cortical substance. It is not so as regards the form of their contours; *that is nearly constant in the same individual, except in crossbreeds*. Taking these facts into consideration, I have always examined numerous sections of several hairs of the same individual, besides which I have examined the hair of several individuals belonging to the same race. As I cannot in the plates represent all the sections I made, I shall confine myself to describe their general form without neglecting such which most deviate from it. I now proceed to the microscopic examination of the transverse sections of the human hair.

The reader is requested to supply, by the study of the plates, the brevity of the descriptions. The ordinary ciphers and the French or Greek letters will easily enable the reader to find the figures corresponding to the indications of the text.

1. NEGROES (VI).^{*} Among the six Negroes there was only one in whom the form of the contours of some of his hairs differed from the usual form.[†] This is elliptic in the great majority of cases. Exceptionally the ellipsis presents an inwardly curved margin, the section is then reniform, or rather the ellipsis presents a depressed spot. As a mean term, the diameters of the Negro hair are 20 : 12. The finer the hair, the greater the proportion of the small to the large diameter; thus, whilst the thickest hairs give 30 : 15,[‡] the finest hair gave 18 : 10, and even 15 : 10; and if these three proportions are reduced to hundreds, it will be found that the large diameter being represented by 100, the small diameter is 50 in the thickest hair, 55 in the intermediate, and 66 in the finest hair. From these data it appears that the hair of the Negro is flattened in proportion to its thickness. In the six samples, one of which is of red colour, one-half present the medullary substance perfectly distinct at least in most of the sections. It is distinguished by a *small* central and circumscribed spot of the same form as that of the hair. In the sections as well as in the other three individuals examined, the medullary substance is absent; some marblings are, however, visible along the whole section. The hair of the Negro is thus elliptical and much flattened.[§] The medullary substance does not always exist; the centre is never empty.

2. HOTTENTOT—BOSJESMAN (I). The hairs of the individual examined are some black and some white, their form being that of the Negro. The ellipsis is, however, somewhat narrower; for, as a mean term, the two diameters are 20 : 11. The sections of the white hair show the medullary substance separated, whilst the black are only marbled.

β The hair from the pubes of the Bosjesman female, known under the name of the Hottentot Venus, presented a very flattened ellipsis; the diameters, the thickest of them, are 20 : 10. Some of the sections are kidney-shaped. No trace of a medullary substance. The small circles produced by the scrolling are but 1.5 millimeters in width.

* The Roman numbers indicate the number of individuals whose hair was examined by the indicated method.

† Three sections presented in this individual a nearly circular form.

‡ The individual to whom these hairs belonged was born in Buenos-Ayres.

§ The flattening is seen in the direction of the scroll. The small circles caused in rolling present a width of 3.5 to 4 millimeters when the hairs are very fine, and in the contrary case of 5 to 8 millimeters.

3. PAPUANS OF NEW GUINEA (II). *a.* One of the heads of hair is very crisp; the form of its transverse sections, though always elliptic, is distinguished by the irregularity of one of its borders, which is either quite straight, or curved inwards in one or two spots; some sections are pointed at one of their extremities;* the proportions of the diameters denote *the greatest flattening which I have found in human hair*. The following are the dimensions—29 : 10 and 25 : 7 for the flattest; and 25 : 14 for the widest. The presence of the medullary substance is the rule in this individual, but the central spot which indicates it, is more contracted than in the Negro.

b. In the second individual, whose hairs are a little thicker, the contours of the ellipsis are more regular, though sometimes flattened on one of their borders. Diameters 32 : 14 and 28 : 13; no medullary substance in this Papuan, except in one section.

4. MELANESIANS OF OCEANIA. *a.* From New Zealand (IV). Three samples of these four heads of hair are of a yellow-reddish colour, the fourth is ash grey; these are likely discoloured by some hair wash. One sample presents the crisp aspect of the Negro hair, the rest present circles which succeed each other at different distances, so as to form tresses rather than tufts.

Though the general form of the sections is in these four samples still elliptic, it approaches the oval form by the enlargement of its small diameter. The crisp hair of the first sample, *a*, gives the diameters 22 : 15, whilst in the others, *β*, the measures give 24 : 18; 30 : 20; 33 : 22.

These hairs are generally thicker than those of the Negro, and it is a question whether the Malayo-Polynesian blood, so prevalent in Melanesia, did not run in the veins of the individuals whose hair is under examination. As regards the medullary substance, it is present in two samples and absent in the rest.

b. Néo-Caledonians (I). The same doubts as regards origin arise in the only specimen of hair I possess from New Caledonia. By its long exposure to the air the colour is ash-grey; it is much curled in all its length; the form of the section approaches the oval, but the margins are somewhat curved; the diameters vary between 30 : 20 and 27 : 25; the medullary substance is well defined.

c. Tasmanians (II). Two specimens from Van Diemen's Land, one black, the other yellowish-white, approach the hair of the New-Irelanders by their tresses, their diameters, and internal dispositions. Diameters of the black hairs = 25 : 15; of the light hairs = 25 : 15

* Compare with the Negro of Buenos-Ayres.

to 27 : 20. The first has no medullary substance; the second has it much enlarged.

5. ARCHIPELAGO FIJI (IV). Two of the four specimens are of a reddish flaxen colour, the two others blackish-brown. One of the last heads of hair has the appearance of a large mop-shaped, very crisp wig. This and the two first are characterised by the great thickness of each individual hair, the yellow or orange colour in the interior of the sections, the large black central spot, and by the elliptical form of the contours, which predominates in spite of the irregularities presented in this respect by the hairs of the wig; where we observe reniform and triangular sections with depressed points and irregular margins, forms which are seen in the hairs of the beard in the Aryan race. Diameters = 35 : 20 and 33 : 20 in two individuals; but in the wig we find 40 : 22; 37 : 22 and even 37 : 20 for the elliptical sections with regular form.

One of the specimens, which is of a blackish-brown, is distinguished from the rest by its relative fineness, and by the tendency of its sections to the oval form. Diameters = 28 : 20 and 22 : 16.

6. POLYNESIA. *a. Nukahiva* (I). Hair slightly frizzled and dark brown. The sections of the thick hairs have an elliptic form, whilst the fine hairs tend to the circular form.* Diameters = 30 : 15; 30 : 20; 25 : 20 and 22 : 10. The interior of these sections is reddish and marbled, scarcely any trace of a central spot.

b. Tikopia (II). One specimen of hair smooth, amber colour; the second specimen, of the same colour, but intermixed with reddish-brown hairs. Besides the ellipsis ordinarily with one straight border, there are observed sections enlarged in their small diameter and approaching the oval form. The diameters vary between 30 : 20; 27 : 12 and 27 or 23 : 20. The interior of the section presents the central spot or marblings.

c. New Zealand (III). These three scalps, black and dark-brown in colour, show in their sections a greater tendency to the circular form than the preceding. Diameters = 30 : 20; 30 : 25; 25 : 17 and 20 : 15. The central spot is very distinct.

7. MALASIA (I). Hair of a Malay girl, jet black, and slightly curled at the point; it presents, in its sections, forms intermediate between the circle and the perfect oval. Diameters = 35 : 27; 26 : 18; 25 : 17; 28 : 20 and 23 : 20. Some sections are irregular; the greater portions are only marbled; others have a central spot.

* Should this be a cross-bred ?

8. AUSTRALIA (II). Hair from Port St. George; black, much scrolled, and consequently of doubtful origin, presents in its sections an enlarged and irregular ellipsis. Diameters = 30 : 20 : 25 : 20. Central spot very large.

Another specimen from the same country; colour red and very curly, consisting of finer hair, the sections of which are much flattened; their predominant form is the irregular ellipsis; there are also reniform sections. Diameters 25 : 15 to 25 : 30. Marblings without central spot.

9. JAPANESE (II). Man, and a girl seventeen years old. Hair of the male very black, stiff, and glossy; sections *perfectly round*. Their diameter is comprised between 25 and 22. The interior is marbled, rarely containing a small central spot. The sections of the hair of the girl present the same regular forms; most are round, some elongated; all have a large central spot. Diameters = 25 for the round, and 27 : 23 for the elongated.

10. SIAMESE (IV). Hair black and smooth. Besides perfectly circular sections, there are, in all individuals, some a little elongated. These latter present the following diameters: 28 : 20; 27 : 24; 26 : 24; and the largest are 30 : 23; 30 : 25. The greater part of the sections have a small central spot.

11. CHINESE (I). The hairs of the Chinese present sections of various forms, from the circular to the elliptic; the ellipsis is, however, never narrow. The following are the diameters for the elongated sections = 33 : 24; 30 : 21; 31 : 19; 30 : 25. The central spot is met with in one-half of the sections.

A cross-bred, whose father is a Chinese, and the mother a Siamese, presented in the sections of the hair a more or less circular form without any central spot.

12. AMERICANS FROM THE NORTH (I). I had only a few hairs from the cranium of a Choctaw at my disposal. The form of the sections of the fine hairs is nearly circular, whilst that of the thick hairs is somewhat elongated. The diameters of the latter are = 25 : 20. In the interior are seen marblings rather than central spots.

13. AMERICANS OF THE SOUTH. a. *Mummies of Aymará of Peru* (II). Hair very smooth, of considerable length, and of red colour, approaching brown. The form of the sections is nearly circular; but the margins are nearly always irregular and angular. The most elongated rings have diameters from 25 and 26 : 23. The central spot which exists in most of the sections is very large.

b. Americans of the South (1).* Hair black and coarse. The principal form of sections is a circle of 25 in diameter, with a small central spot. The diameters of the elongated sections are = 20 : 19, and present in their interior marblings rather than a separate medullary substance.

c. Tribe of the Jambas (1)†. This glossy, dark, and very coarse hair, presents all forms from oval to the circle; hence a great variation as regards the diameter = 33 : 15; 33 : 22; 25 : 20; 25 : 23. Small central spot in all the sections.

It appears to me of interest to add to the preceding observations relating to deceased persons of probably pure origin, the following three made on living subjects of the same continent.

a. M. M—, a native of the Peruvian Andes, aged sixty-three, according to his own account a pure Indian. He is of lank stature; cranium brachycephalous and square, as usual in the Aymara race; cheekbones slightly prominent. The colour of the skin, and the *ensemble* of his physiognomy and stature, do not show his origin; the form of the cerebral cranium is, however, decidedly Indian. Let us now see what says the hair, which *M. M*— assures us was formerly light, but is now whitened, inclining to a greenish-yellow; it is also stiff.

What strikes us in the sections of this hair, is the complete irregularity in its contours,‡ and the tendency of the small diameter to enlarge; a single section, which is the smallest of the five I have examined, presents the circular form without central spot. In all the others the medullary canal is very large. Diameters = 30 : 18; 30 : 22; 25 : 20; 18 : 15, and 12 : 12.

β The son of the preceding, a boy twelve years old, whose mother is also an Indian woman, has a head of hair very abundant, thick, slightly wavy, dark brown.§ The sections of his hair are distinguished by their irregular contours; the smallest are rounded or square, whilst the larger are rather elongated. The form of the latter varies between a widened oval and pointed on one side (27 : 25), and an ellipsis with more or less interrupted borders (30 : 17; 30 : 20; 25 : 20). No traces of a medullary substance; the centre is transparent. Will this be the case at a more advanced age? We doubt it, as the father possesses the usual pigment, and we shall see in the

* Without any indication as regards origin.

† Province of Macas.

‡ This peculiarity appears to me to depend somewhat on age; for I have observed it, though less marked, in the hair of aged Aryans.

§ Excepting in the colour of the skin, the boy presents the Indian type.

sequel, in the children of the Basques, that they are in the same condition compared with the adults.

γ. M. M—z of Lima, aged twenty-three. His father is a Spaniard, his mother an Indian. His hair is black, fine, very curly. The form of the sections presents, only exceptionally, that of an ellipsis (25 : 13), of a widened oval (26 : 21), and of triangles blunted at the points. The centre is perfectly transparent. Mr. M—z has the features of the Spanish stock, and slightly Semitic.

14. ESQUIMAUX (II). One of the specimens, black in colour, presents a round, or but little elongated form. Diameter of the first = 30, of the second = 20 : 17. Another specimen, altered in colour and in structure by its position in the earth, presents, besides round, also elliptical sections, with irregular, straight, or curved borders. The diameters vary from 36 : 20 to 25 : 22. Whilst the first specimen of hair is marbled in its sections, the second shows, in the middle of these sections, large holes with regular contours. Thus the medullary substance resisted decomposition less than the cortical.

15. MONGOL (1). Hair reddish brown, intermixed with red hair. The form of the sections approaches the circular. Diameters 33 : 30; 25 : 23; 27 : 22. The central spot is large, and nowhere absent.

16. TURKS (II). One of the specimens, yellowish-grey, belongs to a Turk of Smyrna.* Though there are some rounded sections without central spot, the greater portion are very elongated, and present a small spot in the centre. The diameter of the latter varies between 30 : 15 and 23 : 17. The second of these sections belonged to a Kouroglou of Algeria. It is greyish-red, and is distinguished by the predominance of the round form in its sections, some of which are of a wide oval form = 17 : 15. It is noteworthy that the centre of all the sections is perfectly diaphanous.

17. EGYPTIANS. a. *Modern* (II). Though one specimen of these hairs be slightly frizzled and the second smooth, they present a great analogy in the form of their sections. The colour is intensely black. The predominant form is the ellipsis, with very irregular borders; most of the sections are reniform. By the side of these curved ellipses there are some very abnormal in form, more or less triangular.† In the ellipsis the diameters are 40 : 17; 30 : 18 and 17; 30 : 15; in the finest hairs, 25 : 15; 28 : 15. Central spot very large in all the sections.

b. *Mummies* (VI); a. *with thick black hair* (III). Of these antique

* The origin of this individual is doubtful.

† Compare the wig of the Fiji with the hair of the beard.

specimens of hair one only exactly corresponds with the preceding by the generally elliptical form of its sections and by the thickness of the hair (33 : 17; 33 : 20), as well as by the well marked central spots. The two other specimens show, in the form of their sections, a tendency towards the oval form (30 : 20; 22 : 15; 20 : 15). These are somewhat finer, with more regular contours; the medulla is not always separate from the cortical substance.

β . Two specimens are brown inclining to red, and one is of reddish-yellow colour (III). The hair in these specimens is finer than in the black. The darkest incline towards the enlarged oval form, of which the following are the proportions, 25 and 26 : 20; 23 : 17 and 18. Most of the sections have a transparent centre, a few only show a small spot. The two lightest specimens furnished elliptical, mixed with oval sections, of the following dimensions: *a*, 25 : 15 and 20; 11 and 12; * *b*, 25 : 20; 25 : 15 and 15 : 10. We must also notice that *a* presents the central spots, whilst that of *b* is perfectly diaphanous.

18. BERBER KABYLE (1). The form of the sections varies between the ellipsis and the oval. Diameters = 28 : 17; 26 : 15; 25 and 23 : 18; no central spot.

19. ARAB (1). This specimen of black hair presents in the sections chiefly the elongated irregular ellipsis (34 : 18; 32 : 16), with small central spots, also some triangular sections† by the side of a secondary form, which is oval (23 : 17; 20 : 16), and without any central spot.

20. EAST INDIANS. By the kindness of Mr. de Montagu and his friends in India, Colonel Pope, Colonel Speak, and Dr. Leith, I am in possession of sixteen specimens of hair from natives of the Presidency of Bombay and the central Deccan. In order not to encumber this short sketch with too many details, I shall confine myself to state the result of my researches on the hair of such native Indians considered as belonging to the primitive stock, to which I shall add the Hindoo Brahman as a member of the Aryan family. These specimens of hair are all, without exception, of a jet black, metallic or silky gloss, and the hairs more or less fine and curly; all this is probably the effect of climate. By the aid of the microscope we may ascertain what belongs to the race.

a. Gond (1). The predominant form of the sections is elliptical (25 : 13 and 15); others present the pointed oval form (25 : 20), and

* *a* reminds us of the Bosjesman and the Negro, and *b* of the Aryan; but the presence of the two forms upon the same head modifies the first impression.

† Compare with the modern Egyptian, in whom there is sometimes a mixture of Arab blood.

there are some few perfectly round. Marblings in the interior; no central spot.

b. Kole (11). Scarcely any section of elliptical form; the greater number incline towards the wide oval; generally great tendency towards circular contours. Diameters 33:22; 23:17; 25:20; 23:20. Marblings, or very small central spots.

c. Bhil (1). Form of sections, either an irregular ellipsis or an enlarged oval. In the first variety there is usually a small central spot; in the second only marblings. Diameters 30:17 and 20; 26:18; 20:17.

† As regards the form of the sections all the other specimens belonging to the natives of India may be divided into two classes. Either it is the reniform ellipsis with a central spot which predominates, as for instance in a man of Ahmedabad, in a Varouli, and a Kathkouri; or the form is circular mixed with irregular sections, which predominate, as in an individual of Mhar. In this specimen the central spot is seen also in the nearly circular sections. These specimens present on the whole in their sections the two extreme forms. Ordinarily one of these forms predominates in the same head, intermixed with intermediate oval forms. My researches are, however, not sufficiently advanced to shew in such cases the primitive forms and the stock from which they are derived. I can only state the facts.

d. Brahman (1). Very regular form of sections presenting a striking resemblance to each other; sometimes an ellipsis, the long borders of which very straight, the small curved, sometimes an oval. Diameters, 22:14; 28:16. A small central spot well defined, presents the same contours as the section in general.

21. *PERSIANS* (11). The hair of these two specimens is somewhat thicker, as in the preceding. The forms of the sections are the same; namely, oviform ellipses, but with more equally curved border. Diameters, 30:17; 29:18; 29:20; 26:17. In one specimen the centre is diaphanous, in the second there is a well defined small spot.

22. *ARYANS OF EUROPE. a. Italian* (1). Hair chestnut colour. Sections oval, 23:17; 20:15; centre transparent.

b. Germans (14). Hair sombre flaxen, or light chestnut colour; two specimens of males and two of females. The general form of the sections is oval and regular. Exceptionally the borders are somewhat straight, angular or curved. Among a considerable number of sections the flattest is 30:16, and the most circular 25:30. The great majority presents the following dimensions: 22:15; 21:15; 25:15. In one specimen of the two males, and one of the two females, the

centre of all the sections is transparent; in the other of the male it is only transparent in some, and in the second female specimen it is scarcely transparent in any.

c. Lithuanians (II). The colour of these two specimens is of straw-yellow.* The sections are oval, with a tendency to the circular form, specially so in one specimen. Diameters, *a*, 24 : 19; 27 : 20; —*b*, 28 : 17; 28 : 20; 23 : 20. The centre is, without exception, transparent.

d. Irish (XLVIII). Excepting a single specimen obtained from a turf-pit, this collection has been formed from living persons by Abbé Domenech. I have subjected all these samples of hair to a double examination; first, to ascertain the variations of the hair in a nation comparatively little mixed, and composed, as history teaches, to a great extent of Aryan elements; and, secondly, to assure myself whether there be an allophyletic stock intermixed with the Aryans. Moreover, accident having placed at my disposal a specimen of hair of great antiquity, its comparison with that of the living might furnish a base for the establishment of what is constant in human races, even in a system of the organism which presents such small proportions.

A. The hair obtained from the turf-pit is smooth and reddish-brown. Sections oviform and elliptical = 22 : 16; 22 : 15; 20 : 15. The centre presents in most cases a small central spot; it is diaphanous in others.

B. The other forty-seven specimens may, according to their colour, be divided into three series, of which the first (16) comprises light hair, mostly golden light; the second (16) comprises dark hair, and the third (15) black hair. To spare the reader the trouble of tiresome details, I present a summary of the results obtained by the examination of the sections. And first, with regard to the volume of the hairs, the lighter the colour the finer the hairs, and *vice versa*. This rule is, however, subject to exceptions; there are three specimens of golden light, the hair of which attains the thickness of the black hairs. As regards the form of the contours of the sections, there is not a single specimen which does not present elliptical or oval sections; but whilst this is the predominant and almost exclusive form in the light hair, there are, on the contrary, in the dark specimens, besides elongated sections, others more or less circular. The irregular contours are rare in the first variety, and very frequent in the second. The light and fine hairs have generally a transparent centre,

* The cranial type of these two young savants is that of the Slavonian race, both in the cerebral as well as the facial cranium.

whilst the black as well as coarse light hair present central spots, at times very large. When now we consider the sufficiently constant form and volume of the hair belonging to the branches of the Aryan family, characters which are to a considerable extent found among the Irish, we can only, as regards the variations, attribute them to the commixture of a foreign element.* The examination of the hair of Basques will confirm this view. It results farther, from this examination, that in the intermixture of races there may be not merely fusion, but a change of characters; at least as regards the hair.

The following table, containing the measures of the extreme forms, will support the preceding remarks:—

B. LIGHT HAIR. Ordinary Proportions with Trans- parent Centre.	C. BLACK HAIR.
a. 20 : 15; 21 : 15; 20 : 13.	22 : 13; 15 : 13; 12 : 11.
B. 27 : 12; 25 : 13; 25 : 15; 20 : 12;	31 : 20; 35 : 15; 24 : 20; 25 : 20.
20 : 15.	
Exceptional Proportions and Central Spots.	
γ. 30 : 16; 26 : 16.	34 : 15; 30 : 16; 27 : 15.
δ. 32 : 20; 30 : 21; 25 : 15.	30 : 18; 30 : 25.
e. 34 : 19; 33 : 21; 27 : 15.	32 : 20; 23 : 21.

23. **BASQUES.** All shades, from flaxen to deep black, are represented in the Basques of the present day. The light colour is preferentially found among those inhabiting the coast and the highest mountains. The average colour of the hair of the Basques is chestnut.† The light hair curls very easily, which is generally not the case with the black.

a. Specimen of black hair from a child aged 11; some light coloured hair in the occipital region. All the sections approach the circular form; the most elongated are 25 : 20. No central spot.

b. Adult male with stiff black hair. All the sections are oval or enlarged ellipses; some are triangular. Central spot well marked. Diameters, 29 : 20; 23 : 18; 24 : 22; 27 : 23.

It is evident that these specimens approach both the American and the Turanian, just as the language of the Basques recalls the Iberian origin.

We now examine the light hair.

* The craniological researches of Mr. Wilde evidently prove that, before the historical epoch, there existed in Ireland, as well as in England, Scotland, France, etc., two different races, the one brachycephalous, and the other dolichocephalous.

† The Basques are, in my opinion, far from constituting a homogeneous race. I believe them, on the contrary, to be much mixed. The marriages of the ancient Iberians with the Celts have been already noticed by the classical authors. The study of the physical type, specially of the cranium (see M. Broca's collection in the Museum of the Society), confirms these historical data.

a. Specimen of light colour inclining to chestnut, wavy, much curled. Sections elongated and oviform, most of them without central spot. Diameters= $30:15$; $30:20$; $25:15$.

In order to show the effect of the commixture of heterogeneous races, as for instance the Aryan and Iberian, I have examined the hair of two brothers, whose father is a Basque and the mother an Irishwoman. The following are the results of the examination:—

A. Chestnut coloured hair, intermixed with white hairs, slightly curled. Most of the sections are elliptical, narrow, with a diaphanous centre. Diameters = $25:15$; $22:17$; $22:15$. But besides this predominant form, there are circular and triangular sections, &c. These latter sections have sometimes a small central spot.

B. Hair darker and stiffer. The elongated form of the sections is not absent ($30:15$; $25:17$; $20:15$; $20:17$); but more than one half of the sections approach the circular form and have a central spot, though it is smaller than in the Basque with black hair.*

24. *French*. The hair of the French, of which I have examined a considerable number of specimens, presents all the shades and forms found in the series 22 and 23, which is explained by the multiplicity of ethnic elements which compose that great nation.

SUPPLEMENT.

I.—*Examination of the hair in some other parts of the body.*

1. *Italians*.—a. Moustaches. Hair, white and yellowish. Most of the sections are very irregular in form, resembling, for example, a triangle, or the form of the sole of a shoe, etc.† These thick hairs attain considerable dimensions; the following are the measurements: $55:30$; $48:30$; $45:30$; $27:25$. The central spot is of relative size. In no section is it entirely absent.

b. The hairs on the genitals are also very thick; their contours are more regular, though some have very singular forms. In the sections with regular forms, the central spots are relatively small. Diameters = $38:15$; $38:18$; $38:23$.

c. The hairs on the coccygian region are fine, and approach, much more than the preceding, the hair on the head, by their dimensions and forms. Diameters = $23:14$; $28:13$. Scarcely any traces of a central spot.

d. The hairs on the chest present, generally, the form of a shoe-

* Of these two brothers, A represents the elongated cranium of the Celts, despite the Iberian origin of his father; whilst the cranium of B is rounder.

† That which is the exception in the hairs of some individuals, is the rule as regards the beard.

sole; some of the sections are more regularly elliptical. Diameters = 38:37 and 36:20. Large central spot.

e. The hairs of the armpit, all with very diaphanous centres, present in their sections more or less regular ellipses. Diameters = 30:16; 32:18; 30:13; 23:15.

2. German. The same characters as in the Italian are observed in the hair of the beard and the armpit. The hairs on the genitals present no abnormal form.

f. The down on the back of the hand presents in the section the oval form with transparent centre. Diameter = 13:9.

II.—Hairs on the heads of *Anthropomorphous Apes*.

a. Male Chimpanzee. The sections are large: between 30 and 23. Their form is generally circular or nearly so: for example, 25:24.

Female Chimpanzee. Hairs somewhat finer. The complete circular form more rare, approaching rather the oval. Diameters = 24:20; 18:14, and exceptionally 25:16.

In both sexes no trace of a medullary canal.

β. Male Adult Gorilla. Hairs very thick. The form of the sections rather irregular; partakes of the ellipsis and the oval. Diameters = 37:25; 35:25; 40:31; in the finest = 27:23. The medullary canal is enormously large.

† *Young Female Gorilla.* Hairs finer. Their sections are either very regular, or with borders, if not angular, at least deviating from the regular curve. Diameters = 20:15;* 22:16; 17:10. The medullary canal is small and rarely placed in the centre.

γ. Orang-Outang. Sections large and elongated in ellipses, without central spots. Diameters = 35:20; 31:18.

b. Gibbon (Rafflesii). Hairs extremely fine. Sections oval and very regular, without central spots. Diameters = 15:12; 13:10.

c. Cynocephalous Baboon. Besides circular sections there are some elongated, with irregular contours. Diameters of the first = 25; of the second 25:20. Central spots very large and elongated.

Résumé.

1. Microscopic examination accounts for the different aspects which the hair of the human races presents to the naked eye. The flatter the hair the more it curls, and the rounder the hair, the more stiff and smooth it becomes.

2. One extreme end of the scale is represented by the Papuas, the

* A striking analogy, in early age, with the Aryan race, at least in regard to the diameters of the first two sections.

Bosjesmans, and the Negroes; the other by the Polynesians, the Malays, the Siamese, the Japanese, the Turanians, and Americans, not excepting the Esquimaux. The Aryans occupy the intermediate space.

3. The Basques differ from the Aryan stock as much by their hair as by their language.

4. Cross-breds are recognisable by the fusion and juxtaposition of the characters inherent in the hair of their parents.

5. It is much less the anatomical disposition of the constituent elements, than the *form* of the hair, which produces the characteristic differences. Anatomically there would only be the transparent centre deprived of medullary substance in some branches of the Aryan race which would deserve to be considered. But the fine points of the hair belonging to allophyletic races, as well as their down, present the same peculiarity.

6. A single hair, presenting the average form characteristic of the race, might serve to define it. But without pretending to this degree of certainty, it is indubitable that the hair of the individual bears the stamp of his origin.

7. Though there are appreciable differences in the form of hairs in the same individual, the extreme forms are only met upon the same head where there is commixture of blood.

8. The small scale assigned to the diameters of the hair explains the relative resemblances between single hairs belonging to individuals of different stocks; but in spite of this apparent inconvenience, the general or predominant form of the sections does not in the same race transgress certain limits, and it is upon this that we must base our diagnosis.

9. The hair examined by our method appears to us to possess an incontestable value for the study of characters inherent in the races of man.

10. Some will find in it forms of transition, for instance, from the Polynesian to the Melanesian, from the Malay and Lithuanian to the Turanian, etc.; from this and the Basque to the American, etc.; whilst others may energetically point out the different and constant forms even in this apparently insignificant appendage of the skin.

11. It is with the form of the hair as with the form of the cranium, however unequal may be the importance of these two characters.

12. I have confined myself to the study of facts. But whilst admiring the incomparable wisdom of the Creator, who has so marvelously diversified what is apparently so minute, I declare my inability to trace it back to the origin of the creature.

POTT ON MYTHS OF THE ORIGIN OF MAN AND LANGUAGE.*

It would not be fair to judge Arius solely from Athanasius' account of him, or even the Rev. Robert Montgomery, from the extracts from his works given by his Edinburgh reviewer. So, knowing nothing of Dr. Kaulen, against whom this "Anti-Kaulen" is a counterblast, except from its pages, we can only say that he appears to be a theologian who has built a theory of the origin and development of language on a theological basis, and, in the course of raising this structure, has taken occasion to sweep away (in a subjective sense, at least) the fragments of construction which Wilhelm von Humboldt and our Halle Professor had set up on the ground. So far so good, but, as Professor Pott admits, many of his own fellow philologists think he might as well have let this adversary alone, and he sometimes almost thinks so himself. As far as the actual controversy is concerned, we think it will be judged in England that the advice of these friends was judicious. Every student of language must be glad to hear Professor Pott express his opinions on philological matters lying outside the range of his more special labours, but it is just the great positive value of the book that makes it seem a pity that these opinions should be mixed up in a controversy with an antagonist who is no match for him. An unpleasant feeling hangs over the reader, that if the two combatants were to change sides, Pott could just as easily hold up to ridicule the weakness of Kaulen's knowledge of comparative philology, as he does now. When Pott attacked Max Müller's views on the Turanian languages in the *German Oriental Society's Journal*, the case was a very different one, for here his antagonist was a man quite worthy to receive his hardest hits, put in with his utmost skill.

The influence of Professor Max Müller's teaching has been so great in England, that his views on the fundamental structure of language have been, to a great extent, accepted by students as though there were no other views in the world. A set of typical

* *Anti-Kaulen, oder Mythische Vorstellungen vom Ursprunge der Völker und Sprachen nebst Beurtheilung der zwei sprachwissenschaftlichen Abhandlungen Heinrich v. Ewald's.* Von A. F. Pott, Dr.; Prof. d. allg. Sprachwissenschaft, etc. Lemgo & Detmold. 1863.

forms of language—the isolating stage, the agglutinating stage, the inflecting stage—are shown gradually sliding into one another, and in the far background is shadowed forth the evolution of language from a unity not yet visible, but hoped to become visible some day. The theory is a beautiful one, and Max Müller's lucid explanation, and well-chosen instances, are commonly thought in England to have cast a bright light, not only on the theory of grammatical structure (which nobody disputes), but also over the deeper problem of tracing language in general to its primary source. We do not say that it has or has not done so, but it seems to us that English students are not sufficiently alive to the fact that in Germany, Max Müller's views on this point meet with but slender support, and that the lamp which he has carried into these recesses of philology is looked upon there as nothing but a scientific will-o'-the-wisp. The writer who has put the idea of grammatical structure so clearly before the world by his system of symbols—Schleicher, of Jena—has no hesitation in giving his opinion point-blank: "There was therefore not one original language, but there were many." And there are three men who have laid themselves out more than any other men living to accumulate a working scientific knowledge of numbers of different families of language, and who ought to be able to catch the loose threads meeting in the distant unity, if it were possible with our present knowledge. They are Pott of Halle, and Buschmann and Steinthal of Berlin. The first goes with all his might against the assumption, and, so far as we can depend on our recollection of the general tenour of the works of the other two, they seem to prefer sitting down in darkness to accepting the light of Bunsen and Max Müller.

It is in great measure against the philologists, from whose stores Herr Kaulen has helped himself to arguments for the unity of language, that Pott's attacks are directed. He goes, on the one hand, against Bunsen and his coadjutors, whom he considers to have assimilated root-words of various families by the process of reducing them to indefiniteness both in sound and sense, and, on the other hand, he attacks Max Müller and H. von Ewald as having striven with hardly better success to wring a unity of the origin of speech from the study of grammatical form, while they troubled themselves very little about the dissimilarity of roots (the word he uses, by the way, is *blutwenig*, an expression which, innocuous as it is in German, one of the odd vagaries of our English euphemism has surrounded with such an atmosphere of mysterious horror, that even the police reports will not print it in full). That there is any such resemblance

among all the families of languages both sides of the world which are neither isolating nor inflecting, as to justify us in connecting them, by genealogical descent, is an idea which Germany repudiates.

It does not appear to German philologists in general, that the Turanian languages, to use the word only for the great family in Asia and Europe to which it really belongs, make up with the isolating languages, such as Chinese, and the inflecting languages, like Sanskrit and Arabic, the rest of language as a whole. The *incorporating* languages of America are, in Steintal's opinion, to be kept separate from them, and so are the Polynesian. But, after all, the question comes, Does a morphological affinity prove a genealogical affinity, or even the probability of one? The gist of Max Müller's argument is that it does. Germany, unconvinced, waits for further proof, and in the meantime busies herself, for the most part, about matters that lie nearer at hand.

We take, at p. 111, a passage from our author, which gives, in a condensed form, his views on the problem of the origin of language:

" 'All races are one man, but with different names; one soul, but with different speech; one spirit, but with different tone.' Thus far Tertullian. I am the last to bring an objection against this utterance. Then, unity of the human race, in spite of the difference—in spite of the manifoldness within it; unity, in spite of the sudden separation of speech and race, brought on, according to the Hebrew legend, as it were by a *deus ex machina*; unity as a species, in a physiological sense, in spite of the manifold differences of race; unity in spirit, even were the origin in the last instance from a single pair and the source of speech and race from that single original pair a mere dream, destined to yield before the infinitely more probable supposition of a pluralistic beginning of mankind on several points of the earth, not merely at a single centre. But a difference of language, not yet to be surveyed in its full extent, is a fact which, if we do not have recourse to miracle, and thereby renounce every rational and scientific explanation, must find a *natural* solution, whether one gets through with one original form for the thousandfold formation of languages, whence, in spite of their great number and variety of kind, they are to be derived, or whether (to me, so far, the only credible theory) a plurality of original languages, not yet settled as to number, are required for the origins of different families, which can hardly be united genealogically, as Indo-Germanic, Semitic, Chinese, Tatar, the languages of America, &c. From these roots I should conjecture radically different lines running from their source in parallel directions, so that these lines, without any kind of contact, even through mixture between languages of any two such families, should keep an equal distance from each other. On the other hand, there reigns in

the so-called radically connected languages, for example, within the Indo-German family, Sanskrit, Zend, German, Slavonic, Celtic, Greek, Latin, and then again within the Latin in its Romance daughter-languages, Italian, Spanish, Portuguese, Provençal, French, Wallachian (to say nothing of the still subordinate dialects), the principle of continual splitting and severance from an originally single line, which, like the trunk of a tree, divides into a plurality of branches and twigs. But he who, against all chance of success, seeks also for those families which are, as it seems to me, specifically distinct and genealogically unconnected, a higher unity reaching back over them to that point, that in the last and highest instance the families of language of the earth, without exception, and from the lowest to the highest, must find their historical point of issue in but a single *root*, as from the one mother stem of the banyan tree, daughter-stems, bodily connected with it, spread themselves far around,—well, I wish him much luck on his road. Practicable, at least in the present state of science, and with the most patient and careful use of the means at her command, can such a project never be."

To attempt to hold the balance between Pott and Max Müller is the last thing we should think of doing. We had rather turn aside to call attention to a point upon which not theory, but observation is urgently needed. Every one knows that in some languages, especially of barbarous tribes, a process of breaking down is going on by which several words or particles are put together and then reduced by hurry or imperfect pronunciation to a form in which the original elements are scarcely, if at all, recognisable by any one who does not know the history of the word. There is an account of the formation of a North American Indian word, meaning, if we remember right, "give me your pretty little paw," from a number of words run together, and mutilated beyond all recognition. The story has been decanted from one book into another till readers are fairly sick of it, and look involuntarily forward when they meet with any allusion to American languages, in the fear that the pretty little paw is, for the fiftieth time, coming down upon them. But, though this important subject is often alluded to in a loose general way, how small a quantity of evidence we have regarding this important phenomenon beyond the scanty instances to be found in Heckewelder and Buschmann, and a few others, how little we know of the limits of its occurrence, and the condition of language which specially favours it. We do not say that no attention has been paid to it, but that the systematic body of observations which are urgently wanted from different parts of the world is hardly begun. A language running riot in such formations as this, might, for all we know, change its whole vocabulary in a few

generations, and alter itself beyond recognition. This matter is one on which sound observation can only be made by persons living in contact with savage tribes, and being able to carry their observations over a series of years, and it is clear that till we have more complete and scientific knowledge of what this process can and cannot do, its results will always be a barrier to the general classification of languages in their genealogical order. Our attention was lately recalled to this point by meeting with the word *shillorth* in common use in the West of England, and thus making up with *haporth* and *pennorth*, a series of formations in close analogy with the broken-down compounds of North America, in which the component parts of *halfpennyworth*, *pennyworth*, *shillingsworth*, are hardly less mutilated than in the regular American examples.

Much of the argument of Pott *v.* Kaulen goes into matter less belonging to anthropology than to biblical criticism, in which Professor Pott's views belong to the rationalistic school. Some remarks on the personification of names of tribes, &c., into mythic ancestors, however, belong to comparative mythology, and furnish a highly remarkable list of eponymic myths, of the class of that of Turk, and his two descendants, Tatar and Mongol, and that of Herakles and his two sons, Iber and Celtus, from whom, of course, the Iberians and Celts are descended. Perhaps the most remarkable are the personified African cities from Barth, the towns Rano and Kano, Katsena and Segseg. The author has not judged it necessary to give a complete list, including our own familiar Brutus and others who are to be met with, but a still fuller treatment of the theme would be a desirable contribution to science.

At p. 34 some remarks are made on the ways in which it may come to pass that an individual may have a plural name, as in the cases of Amici and Medici. There are some well-known Spanish names which might be adduced in this connection, Dolores, Mercedes, Angeles, &c., which form their diminutives so curiously in the first and last instances by the compromise of a feminine plural to a masculine noun, of course with a view to the fact that they are women's names, Dolorcitas, Merceditas, Angelitas. It is fair to treat these words as names, as they are commonly used as such, though technically they are only abbreviations on the high road to becoming independent names, for (unless we are mistaken) girls are not christened Dolores, &c., but Maria de los Dolores, Maria de las Mercedes, Maria de los Angeles, Mary of the Dolours, of the Joys, of the Angels.

Belonging, also, to mythology are remarks on the world-egg,

p. 68, and the two calabashes which, in Africa, represent the two halves of the egg-shell which formed heaven and earth. At p. 27, &c., are remarks on legends of genealogies and creations of man, made with a purpose of riveting the chains of caste, of which the descent of the Brahmins, Kshattriyas, and so forth, from the head, arms, thighs, and feet of Brahma, is the typical instance. Towards the end of the book, Professor Pott again gives his reason for entering into controversy, namely that Kaulen's book has in it that which might deceive many, by a misuse of the outward garb of science, and by taking to itself its phraseology, without really being science, or, at bottom, even wishing to be. We will not attempt to judge how far this is true, but Professor Pott's book leaves upon us an impression, that controversy in print between theology and philology is a thing to be avoided. Comparative philology is, and probably long will be, in an incomplete and transitional state, especially as to first principles, and trains of reasoning, which students read for the sake of the positive knowledge to be got out of them, have often not the force in controversy which belongs to the well-laid arguments which can be set out even by an ignorant and narrow-minded controversialist whose very train of thought may spoil him for better work. To put an imaginary instance: philologists all know that Wilhelm v. Humboldt was the master-mind to whom so much of the higher development of their science is due, and the results of his labours have spread far beyond the small circle of the men who have been really able to follow the workings of that wonderful mind. But even those who know but very little of his works, know that they abound in what his well-known commentator delicately calls dualisms, but which the poorest controversialist might, and probably would, bring forward as flagrant and stultifying contradictions, and on the strength of which he could hold Humboldt up to ridicule, as saying a thing in one chapter and categorically denying it in the next, and, in an appeal to the public, it would be very hard to refute him. We have found in England that to bring scientific argument into the exciting atmosphere of religious controversy has not produced desirable results, but of course it may be different in Germany.

We in England are hoping soon to see the third volume of Professor Pott's *Etymological Researches*, in which the Sanskrit roots are worked out into the newer Aryan languages. The early edition of thirty years ago is, of course, now far behind the times, and there is no book to which the student of the higher Aryan etymology can go for a treatment of the subject as a whole. It is to be hoped that

we may soon have, from the man to whom we owe so large a share of the knowledge of philology in its highest departments which enables us to look down from so great a height upon the etymologists of the last century, the completion of his great work in its new and more perfect form.

ITALIAN ANTHROPOLOGY.*

DR. GIUSTINIANO NICOLUCCI is a convincing evidence that the light of one of the most modern of the sciences, if we date from the period of its proper cultivation, has begun to shine in Italy. His learned, systematic work on ethnology, *Delle Razze Umane*, appeared at Naples in 1857, in two vols. 8vo., illustrated with fifty-six plates, many of which are coloured. The motto selected for these volumes, "Ex uno omne genus hominum" (Act. Apost. xvii, 26), evinces the side from which he regards human races,—the same taken with so much candour, and laboriously pursued with so little satisfactory result, by Prichard, whose great work Dr. Nicolucci appears, in some measure, to have set before him as his model. It is an able and very instructive review of the whole family of man, not merely from the physical and craniological points, but historically and linguistically, also,† and, by the diligent research of the author, embodies much information obtained since the days of Prichard. He dedicates the fourth chapter of his second book, the most copious in the work, to the "Famiglia Pelasgica" of his own and the neighbouring countries, which is investigated with great erudition. It was scarcely to be expected that the early anthropologists of Germany and Italy would advance so soon to the *polygenist* doctrine as the writers who employ the English language, whether in Britain or in North

* Di un antico Cranio Fenicio rinvenuto nella Necropoli di Tharros in Sardegna. Memoria del Dottore G. Nicolucci. Torino: 1863.

Memoir on an Ancient Phœnician Cranium, found in the Necropolis of Tharros, in Sardinia.

† The merits of the two methods of study have been lately discussed with great discrimination by a competent writer, Dr. Paul Broca, the neverfailing Secretary of the Société d'Anthropologie. Professor Broca, rich in anatomical knowledge, and well versed in the other branches of anthropological science, has established the vast pre-eminency of physical and physiological research. "La linguistique et l'anthropologie", par M. Broca. Bull. de la Soc. d'Anthrop., iii, 264.

America, as it is to those who use this tongue that we are indebted for the most esteemed and most original books on the subject hitherto written. To craniology, Dr. Nicolucci's medical education may be considered to have inclined him, and we entertain the hope that he will, by more especially devoting himself to the study of the anatomical peculiarities among human races, contribute materially to advance the noble science to which he has dedicated his talents with so much success.

The origin of the present Memoir, which may be regarded as an evidence of the author's learning and persevering research, was the acquisition of a calvarium, discovered amid the ruins of the ancient city of Tharros, or Tharras, in Sardinia, accompanied with an engraved stone stele, or tomb-stone, bearing a brief memorial of the deceased in the Phœnician characters. The politeness of the donor of this Phœnician calvarium is commemorated by the author in these terms: "*La squisita gentilezza del mio distinto amico cav. Antonio Garbiglietti.*" Dr. Garbiglietti, himself an accomplished craniologist, exhibited great discrimination in bestowing this precious relic on his friend, whose efforts have tended to illustrate it in so satisfactory a manner.

In the year 1854, Signor G. Cara received an intimation from the Minister of Public Instruction to make further excavations on the site of the ancient city of Tharros, which had previously afforded a rich harvest of objects of antiquity, many of them in gold and silver, an evidence of the importance of this city, and of the opulence of its inhabitants. In the course of his explorations in the necropolis, he came upon the remains of three bodies, which, at the first opening of the tombs, presented an almost entire state. On exposure these were quickly reduced to powder, so that the three calvaria, without their lower jaws, were the only remains Signor Cara was able to preserve. This is greatly to be regretted, as the presence of the lower maxilla is always of the utmost importance in the estimation of the magnitude, the form, and the expression of a skull. Possibly, nay probably, the immediate application of a little spirit varnish would have preserved these essential portions of the face. The other two of these cranial relics are deposited in the Museum of the Royal University of Cagliari, in Sardinia.

Of the ancient city of Tharros itself nothing can be learned from history, neither its founder, nor the epoch of its origin. Two MSS. of the fifteenth century, found, a few years ago, in the archives of Arborea, are considered to have opened the way to the investigation of

these points. From one or the other of these documents it is collected that traditions remained in Sardinia at the end of the ninth century concerning the foundations and fortunes of Tharros.

A certain Tarra, the wife of Inova, very rich, had a predominant influence among the Phœnicians and Egyptians, who, refusing to live in subjection to the Greeks of Iolao, a city or a district of the island, repaired to the region of Sinis, in the neighbourhood of the Cape of San Marco. There they sustained long contests with the aborigines, who were settled in the adjacent Norachi, but, after seven years, peace was made, and they founded a city, which, in honour of their heroine, they named Tharros. This city grew and flourished by commerce and industry, and became so strong as to maintain its independence of the Greek cities of Iolao and Olbia. The people of Tharros carried on other wars with the inhabitants of Cornus, a city equally Phœnician, whose founder was a king of the same name. They suffered much by the ferocity and treachery of one Numilia, who was among the royal successors of Cornus, but they finally triumphed, when that city was under the rule of Patenore and his son Thaar, and sealed their victory by burning almost the whole of Cornus. Tharros had also to suffer serious injuries from the Vandals; but, in the end, the citizens valorously repulsed them. They were not equally successful against the Saracens, who, in the year 1050, sacked and burned Tharros; not many years after which overthrow the inhabitants abandoned the place, and went to reside in Oristano (probably the ancient Orthoca), which became the capital of the jurisdiction of Arborea. Thus the traditions concerning Tharros, in the necropolis of which city this calvarium was found, agree in affirming that it was built and inhabited by Phœnicians, mixed with Egyptians. But this was not the sole colony those ancient masters of the sea led to the island of Sardinia. Mention is made of others regarded as both before and after this of Tharros, by different writers of antiquity.

In concurrence with what we have already related, the *Ritmo Sardo*, or Sardinian Verses, which contains the traditions current in the island in the seventh and eighth centuries, respecting the derivation of its inhabitants, mentions, before all others, the Phœnicians as having peopled the island with their colonies.

V. 32. *Et vos primum, O Phœnices,—qui invenistis insulam,*

33. *Atque postea conduxistis—gentes et populos,*

34. *Et Sîdones et Thyrios—et multos Ægyptios.*

"It is not therefore to be wondered if, in a country which, for so long a time, was colonised and held by Phœnicians, by Phœnico-

Lybians, and Phœnico-Punici, sepulchres should be met with in which sleep the sleep of death those Semites who had changed their abodes, or their descendants. The necropolis in Tharros is, perhaps, the most conspicuous among all those found in the island of Sardinia," (p. 6).

This cemetery is dug in a soft calcareous sandstone, and presents a series of sepulchral chambers of different sizes, of an oblong quadrate or cubic form, which are approached by a narrow passage, mostly occupied by a stair cut in the rock. The opening to them is not so much as five feet in height, and is closed by a large rough stone, upon which at times sculptured figures are seen. The doors of the tombs are always turned to the east, and the bodies they contain equally look towards that quarter. The number of skeletons they contain are one, two, three, and sometimes four; constantly turned to the rising sun, with arms at their sides, or female ornaments and urns of varied forms, some of which present inscriptions in Punic or Phœnician.

The tomb from which the three calvaria were obtained by Sig. Cara had an entrance which opened into a narrow passage, ten feet long, and three feet and a half wide. At the extremity, by means of two steps, the sepulchre was entered where the bodies were laid in a horizontal position. It contained besides, vases of different forms. One of the bodies had on its right side a long sword, and a shorter near its feet. The sepulchre was about ten feet in length and nine in width. Near its entrance was found the inscribed stele, in the form of a little temple, already mentioned. "This inscription places the seal of certainty on the conjecture that these tombs are Phœnician, and contain the mortal remains of persons belonging to that people so celebrated in antiquity" (p. 9).

The little inscribed pillar is about three feet six inches in height, and about eight inches wide in the middle of the inscription. This is in the Phœnician characters of that form used in the latter times, of the tongue and not much anterior to the Christian era. Hence the opinion of Spano, that it cannot be anterior to the second or third century before Christ, and must *appertain to some Phœnician family which had recently established itself in Tharros during Carthaginian times, or to the descendant of some family of remote times, namely, those of the foundation of the city.**

The learned, who have studied to explain the legend on the stele, do not all agree in their versions. SPANO, who was first to give the

* Bull. Arch. Sardo, 1856, p. 38.

interpretation, believed the inscription might be designed to perpetuate the love of a father, named *Chatam*, or *Katam*, towards a daughter who had perhaps died in the flower of her age, called *Mistala*, hence he read it and unfolded it thus :

Mistala beth Chatam ben Jetzabel.

To *Mistala*, daughter of *Chatam*, son of *Jezbale*.

BOURGADE, who made this inscription the subject of his study, does not agree with *Spano*, and his interpretation of the Phœnician text is as follows :

Indicatio cubiculi

Katami filii

*Jubalis.**

Dr. Nicolucci, not being fully satisfied with either of these two interpretations, requested the opinion of the celebrated Roman Orientalist, the *Abbé LANCI*, from whom he obtained the following reading and translation, which he justly designates "The most simple and beautiful brief funeral lines :"

Miscean d— Jagtham ben Jubal.

Locus dormitionis Jaghtami, filii Jubalis.

The place of repose of Jaghtam, the son of Jubal.

From all this it is clear that the tomb at *Tharros* was Phœnician, and equally so that to this people the bodies found in it have belonged, and that the cranium described and figured must be accepted as Phœnician, pure and genuine ;—whether the individual of whom it made part was originally from *Canaan*, or the descendant of a family from that country ; whether he came from *Carthage*, or was derived from some other colony on the *Atlantic*.

This calvarium has belonged to a man of a little beyond sixty years of age. Regarded by the *norma verticulis* it presents a very regular oval ; but the lateral profile does not offer the same regularity, for after an elegant elevation of the forehead, it rises more than usual to the vertex along the sagittal suture, and then descending rapidly, is elongated about the occipital protuberance, which in its turn is not curved gently to terminate at the *foramen magnum*, but passes with an unusual inclination to meet that foramen.

The forehead is broad and high, and the superciliary region corresponding to the frontal sinuses, rather prominent. Then all the frontal region rising as far as the coronal suture dilates moderately at the sides, and by a gentle line goes to meet the superior angles of the

* See his letter to *Spano*, *Bull. Arch. Sardo*, an. ii, p. 88.

parietals and the alisphenoids, so that the temporal fossæ are neither very spacious nor deep.

The orbits, situated in a horizontal line, are large and tend more to a round than quadrate form; the nasal bones are very prominent and inserted at an angle of forty-five degrees of inclination to the frontal. The malar bones are neither large nor prominent, but extend somewhat to the sides, so that the zygomatic arch stands a little on the outside of a line which descends perpendicularly from the parietal protuberance. The superior maxillæ are not high nor broad, but well proportioned, with a rounded alveolar border, and the alveoli stand in a vertical direction. All the teeth are wanting, except the two premolars and the two first molars, on the left side. These are much worn by long use, as is commonly the case in men of advanced age. The last grinder of this side is wanting and the alveolus has wholly disappeared; on the opposite side, besides this alveolus, that of the first true molar also is absorbed.

The bones of the palate are flat and not very scabrous; the mastoid processes rounded, but not large; the base of the calvarium is divided into two equal halves by the anterior edge of the occipital foramen, and if a perpendicular line were raised from that edge to the vertex, the whole calvarium is so regularly developed that the two halves which would result would be equal, without any predominance of one over the other.

Dr. Nicolucci has added a copious table of measurements in *millimeters*, according to the elaborate method of Dr. Aitken Meigs. It is highly probable that the reader would find it both preferable and more instructive to have measurements given in English inches and tenths, the standard *selected* by the distinguished craniologist of St. Petersburg, Von Baer; and, also that a simpler series of measurements, verified upon the calvarium itself, should here be substituted.*

- A. Internal capacity in ounces avoirdupois, of dry
Calais sand - - - - - 79 ounces.
- B. Horizontal circumference, taken about an inch above
the fronto-nasal suture, round the most prominent
part of the occiput - - - - - 20.6 inches.
- C. Fronto-occipital arch - - - - - 15. "
a. Frontal portion 5.1 in. b. Parietal portion
5.1 in. c. Occipital portion 4.8 in.

* By the great kindness and liberality of the eminent Neapolitan anthropologist, this very rare and interesting craniological relic has now been added to the collection of the writer.

- D. Inter-mastoid arch, taken from the tip of one mastoid process to that of the other - - - 15 inches.
 . Length, or antero-posterior diameter - - - 7.8 "
 F. Greatest breadth, which is inter-temporal - - - 5.6 "
 a. Frontal breadth 4.7 in. *b.* Parietal breadth 5.1 in. *c.* Occipital breadth 4 in.
 G. Height, taken from the plane of occipital foramen to the vertex - - - - - 5.6 "
 a. Frontal height 4.7 in. *b.* Parietal height 4.8 in. *c.* Occipital height 4.2 in. All taken from the axis of the auditory foramina
 I. Face, width of, at zygomatic arches - - - 5.3 "
 J. Proportion of breadth to the length, taken at 100, .76
 K. Proportion of height to the same, .76

Hitherto, the only cranium known and described as Phœnician, is the one in the Mortonian collection, so much commemorated, and procured by M. Fresnel in the Necropolis of Ben Djemma, in the Island of Malta. This skull is figured in the "Indigenous Races of the Earth",* where it is carefully described by Dr. Aitken Meigs, and again in his excellent edition of Morton's Catalogue of skulls. It is regarded by Dr. Meigs as, in the form of its face *sui generis*, and is dolicho-cephalic and prognathous. Fresnel, in the note with which the skull was accompanied when he sent it to Morton, spoke only doubtfully of its ethnic origin, saying "that it appeared to have belonged to an individual of the same race which occupied the northern coast of Africa and the adjacent isles, in the most ancient times." No doubt, taken literally, this would be the aboriginal race, or races, of these countries, which were replaced by the Phœnician colonists. But it is even uncertain whether this were the meaning of Fresnel. However this may be, Dr. Niccolucci, without venturing to contradict the authority of Morton, is disposed at least to regard its Phœnician origin as not confirmed, and to believe that this Tharros specimen may and ought to be considered, up to this time, as the only authentic skull which represents the cranial type of that people so celebrated in antiquity.†

* Page 314, Fig. 36.

† M. Beulé, a fortunate explorer of the ruins of Carthage, has not been able to rescue a single skull from the necropolis of that city. He says: "Les os que l'on retire des niches encore fermées sont goulés par humidité, et mous comme une pâte; peu-à-peu le contact de l'air les dessèche, ils deviennent friables, et le doigt les réduit en poudre. C'est pourquoi il m'a été impossible de recueillir un crâne entier, et de rapporter un spécimen de la race Carthaginoise." *Journ. des Savans*, 1860, p. 568.

The Mortonian cranium differs much from that here described; for whilst the Tharrenian head has all the characters which place it among the most perfect *dolicho-cephali orthognathi*, the Maltese, on the contrary, is peculiar, and is decidedly *prognathous*. Dr. Nicolucci says, that, if there be any skull with which this cranium of Morton's may be compared, it is that of the indigenous inhabitants of the Atlantic Coast, the descendants of the Lybians of antiquity, who spread from the confines of Egypt as far as the Fortunate Isles, and from the shores of the Mediterranean to the Sahara. In these, also, he affirms the cranium is narrow and long, the jaws prominent, but the teeth so placed in the alveoli, that, as in the Maltese skull, they approach the vertical direction. He adds, the same conformation is observable likewise in the crania found in the burial places of the ancient Guanches, inhabitants of the Canary Islands. By such comparisons it is easy to infer, that the skull, believed by Morton to have belonged to an individual of the Phœnician race, ought only to be regarded as purely Lybian, its form being similar both to that of the heads of the the Guanches of the Lybian stock, and of the Berber tribe of the present day, the legitimate descendants of the aborigines of Northern Africa.*

Dr. Nicolucci declines to discuss the question, whether the Lybians of antiquity might have occupied the Island of Malta before any other people. Still, since the Phœnicians colonised and ruled over this island for a long time, he thinks it not improbable that they might also gather colonies there from the neighbouring African coast, where their power was so extensive; and that precisely to one of these, or their descendants, this head, which Morton believed to belong to the Phœnician race, may be referred.

Finally, the author speaks of the resemblance of this calvarium from Tharros to the skulls of Arabs and of Jews.† He affirms that it is

* The Guanches have usually been regarded as allied to the Lybian tribes. It would probably be very difficult to decide this point craniologically, from a want of sufficient materials even, were there not other causes. The writer, from an examination of about thirty skulls of Guanches from the sepulchral caves of Teneriffe, is disposed to look upon them as of a peculiar type, it may be distinct from all others. As far as his observation goes, they do not present any remarkable similarity to the Mortonian skull from Ben Djemma. Dr. Garbiglietti showed the error of the strange opinion, that the Guanches were a race of giants. (Nicolucci, *Razze Umane*, i, 295.) And Dr. Hodgkin has gone much farther. He has collected evidence to prove that they were of very moderate stature, even of less than the medium stature of Europeans; in fact, diminutive. (*Ethnological Journal*, 1848, i, 167, "On the Ancient Inhabitants of the Canary Islands.")

† The prominent acquiline nose, raised on elevated nasal processes of the superior maxillary in this Tharros calvarium, are unquestionable approximations to Jewish features.

on one model that the Phœnician skull and those of Arabs and Jews are formed, and that from this alone may be determined the identity of the race of these three peoples—an additional argument, he adds, to so many possessed by ethnological science, respecting the common origin of all the branches of the family of Shem.

We have thus given, as often as possible in the words of the author, a full analysis of a Memoir of the greatest interest, which discusses, in a very able and complete manner, the origin of this rare calvarium, and satisfactorily proves it to appertain to the Phœnician race. This learned dissertation will exhibit to English readers the readiness and preparedness of its author to discuss the most intricate problems of ethnology and craniology with judgment and candour.

The three carefully executed lithographic Tables, which give a profile, a front and a vertical view of the calvarium, of *full size*, are of great value in acquiring a due appreciation of the peculiar forms of this rare relic.

In conclusion, it is scarcely necessary to add anything further, unless a remark or two may be permitted which would bear on the value of craniological evidence in its present nascent state. Whether our knowledge of the ethnic conformation of the human skull in different races, especially those introduced into this recondite discussion, is yet so complete as to enable us to come to precise and definite conclusions may admit of further consideration, at least. And, particularly, whether the materials up to this time at our disposal for deciding the question of the *typical* form of the Phœnician cranium are sufficient for such purpose, may be deserving of some doubt. Whether the crania of what are usually called the Semitic families, of Jews, Arabs, etc., have been hitherto adequately studied and compared for valid inferences to be deduced as to their differences and resemblances, is not yet certain; nor, indeed, whether the different branches of the Phœnician family may not yet be found to present appreciable cranial diversities. In the very desirable and still requisite advancement of craniological research, there is room for many laborious and cautious observers, and there are few who have turned their attention to such subjects better able than our author, from his medical instruction, his varied knowledge, and his acuteness, to contribute to the building up of a more substantial and permanent scientific structure. We hope often to meet with him again in these investigations, and are persuaded it always will be with substantial additions to our knowledge.

J. B. D.

ON THE SCYTHO-CIMMERIAN ORIGIN OF THE LANGUE ROMANE.*

By RICHARD STEPHEN CHARNOCK, F.S.A., F.R.G.S., F.A.S.L.

At a meeting of the Royal Society of Literature of Great Britain, held in June last, a paper in the French language was read by M. le Duc du Roussillon on the Scytho-Cimmerian origin of the Langue Romane, which paper has since been printed among the transactions of the Society. As the subject is ethnographical, as well as philological, I will take the liberty of making a few remarks upon the paper.

Let us see what the author says at the first setting out:—

“J’ai l’honneur de communiquer à l’Académie une découverte qui pourra servir à faire connaître toute l’utilité que l’on peut retirer, au point de vue des origines, d’un élément fort négligé jusqu’ici dans les études archéologiques. Cet élément n’est autre que la nomenclature des noms de lieux d’une contrée, habités ou non, de montagne, vallon, cours d’eau, promontoire, étang, etc., etc. Il est logique d’admettre, que chaque association humaine qui s’est fixée la première sur un sol, a dû déterminer et arrêter toutes les désignations de cette nature nécessaires à ses fins, soit qu’elle apportât avec elle un langage tout fait ou bien que la formation de son idiome soit postérieure à l’époque de son établissement. Il est évident aussi que ces désignations ont été prises dans son langage même. Certes, si les races ne s’étaient pas mêlées, rien ne serait plus facile que la classification des éléments que fournirait la plus superficielle investigation. Malheureusement, il n’en serait pas ainsi pour les pays anciennement habités, à ce que l’on suppose. Ici, la conquête aurait successivement déposé sur le même sol, comme les couches multiples d’un limon différent de nature, vingt peuples dont de langage ne se ressemble point. Et en admettant que chaque nouvelle conquête ait amené une nouvelle modification, dans le sens du dernier idiome introduit, comment est-il possible de se reconnaître au milieu d’une telle confusion? C’est là du moins l’opinion admise. C’est contre cette opinion que j’aurai à lutter lorsque j’avancerai, par exemple, que sur un sol qui m’est très-familier, j’en conviens, les deux versants des extrêmes Pyrénées-Orientales, entre le cours de l’Aude, de la Sègre et la Méditerranée, à peu près, je puis démontrer que la plus grande partie des noms de lieu est tirée de la langue romane. Elle n’en sera que plus rebelle si j’ose affirmer que deux mille noms de lieu environ, relevés sur les cartes de la *Kersonèse taurique*, bords du *Palus Mæotis* et du *Pont Euxin*, présentent le même caractère, d’où résulterait que l’idiome vulgaire de la Gaule

* Mémoire sur l’origine Scytho-Cimmérienne de la langue Romane. Par M. le duc du Roussillon. Première partie, 1863. J. E. Taylor, Little Queen Street, London.

celtique et nord de l'Ibérie aurait été introduit dans ces deux dernières contrées par une émigration appartenant à des peuples déjà établis sur le sol de la péninsule cimmérienne et ses environs."

M. du Roussillon tells us he is far from ignoring the quicksands of etymology, in which nevertheless he is continually sinking.

"Il est d'abord un premier principe à poser, démontrer et établir assez solidement pour qu'il résiste à toute objection, car il forme la base sur laquelle repose principalement mon travail. Ce principe c'est: *que les noms de lieu monosyllabiques ne sont pas sujets, généralement parlant, à produire des erreurs d'étymologie, étant pris dans les limites assez étroites ci-dessus indiquées, c'est-à-dire l'Aude, la Segre et la mer.* Malheureusement, ils ne sont pas nombreux, et jusqu'à présent je n'en ai recueilli que 126."

Then follows a list of monosyllabic names of habitable places on both sides of the Eastern Pyrenees.* Of these, eighteen are untranslated, about half-a-dozen are rendered reasonably enough, whilst the etymology of the remainder is wholly misconceived. Witness the following:—*Az*, torche; *Bel*, voile; *Bols*, vols; *Bot*, vœu; *Bren*, petit pain; *Cerche*, recherche; *Corb*, corbeau; *Cors*, cœurs; *Cuel*, recolte; *En*, vase à liquide; *Er*, aire; *Faü* and *Fay*, je fais; *Fals*, faux; *Ger*, jarre; *Gos*, chien; *Ix*, il sort; *Joch*, jeu; *Llar*, du lard; *Nils*, miaulements; *Oix*, il sort; *Os*, as; *Paü*, paix; *Pao*, paon; *Ples*, plaisirs; *Pals*, batons; *Quart*, quart; *Scarp*, prix fait; *Sort*, le sort; *Tech*, il tisse; *Tost*, tôt; *Vos*, vous; *Lli* or *Lli*,† lin. It may be true, as M. du Roussillon asserts, that monosyllabic names are less liable to corruption than polysyllabic names, but does it follow that all names which are now found as monosyllabic were originally so? I am inclined to think not, and that we can seldom judge of a name as it stands, the more especially if it translates nonsense; and that the only scientific way is to endeavour to discover the earliest orthography of the name. Let us take such a name as *Autun*. Nothing is easier than to assert that *au* means 'to the,' and *tun* 'an enclosure'; but if, upon research, we find that the place was originally called *Augustodunum*, we can have little hesitation in concluding that *Autun* has been corrupted down from *Augustodunum*.‡ Leclerc made a great mess of it when he derived names *direct* from the Celtic, without considering the earliest and intermediate orthographies of names.§ Among other

* Sur les deux versants des Pyrénées-Orientales extrêmes.

+ M. du Roussillon says in a note, *la gly* peut être l'abréviation de *l'ayguali*, "masse d'eau". It is rather the Celtic *lly*, found in so many names, and signifying "water".

‡ Archéol. Celt. Rom. Par J. B. Leclerc. Paris: 1843.

§ Bescherelle has, I am sorry to say, followed in the footsteps of Leclerc.

trash, witness the following: *Passy*, pic à l'étang (*pé a sy*); *Gentilly*, terre du château à l'Hy (*gé en tily*); *Choisy*, champ à l'étang (*ca au sy*). After laying it down that, notwithstanding foreign conquests and the introduction of Christianity, denominations have generally remained the same, our author has the following on the influence of the Latin language upon local names:—

"Ce n'est pas à l'influence de la langue latine que l'on peut attribuer les désignations primitives, puisque plus d'un demi-siècle avant la conquête romaine cette contrée était couverte de nombreuses tribus d'origine diverse, mais la plupart *gauloises*. Pour s'en convaincre, il suffit de consulter Polybe, Tite-Live et Pline. A cette race appartenaient les *Sardones* d'après le premier auteur, et les *Ilerdenses* d'après le troisième, quoique les deux tribus fussent établies sur les deux versants opposés des Pyrénées. Cela s'explique par un passage de Diodore de Sicile, où il est dit qu'après de longues guerres, *Ibères* et *Celtés* s'accordèrent mutuellement le droit de fonder des établissements sur chacun de leurs territoires respectifs que divisait la ligne des Pyrénées. Le poète Silius Italicus dit aussi: '*Pyrene celsa nimbosi verticis arce, divisos Celtis longè prospectat Iberos.*' L'autorité de Polybe établit le même fait.

"(Polybe) . . . Il ajoute même expressément: 'que les deux villes d'Illiberis et Ruscino étaient habitées par les Gaulois.'

"Pline dit textuellement: 'Narbonensis provincia . . . agrorum cultu . . . opum . . . nulli postferenda, breviterque Italia verius quam provincia.' Puisque la Gaule narbonnaise était l'égale de l'Italie en richesse et en culture, c'est probablement qu'elle l'était aussi en population."

It may be observed with reference to the influence of the Latin language, that more than two-thirds of the words contained in the Spanish, Portuguese, the Romance languages, and the French, are of Latin origin, and that the Celtic dialects contain thousands of words derived directly or indirectly from the same source. No doubt, generally speaking, the Romans merely Latinised local names as they found them, but Europe, notwithstanding, contains thousands of names of purely Latin origin. Instance Autun (before-mentioned), Faye, Le Faou, and Faouët, in France, from *fagus*, a beech-tree; Badajoz, Zaragoza, and Trujillo, in Spain, respectively from *Pax Augusta*, *Cesarea Augusta*, and *Turris Julia*; and such names as Aix, of which there are seven in France, Sardinia, and Germany; and even Dax itself, all derived from *aquis*. On the antiquity of the *Langue Romane*, we are informed, *teste Strabo*, that the Iberians made use of two words still found in the Catalan: "They called buckers *pels*, and rabbits *liberides*; and with them the rabbit was only a little hare, now *llebrete*, derived from *llebre*." No doubt; they

got the former from the *L. pellis*, and the latter from *lepus*, *leporis*. Of what force then is the remark?

In his endeavour to account for certain monosyllabic names, our author says:—

“Le nom de *Tor* se trouve porté par divers établissements situés sur la côte maritime aussi bien que sur les hauteurs des Pyrénées. Mais, ni dans la langue vulgaire, ni dans les dictionnaires, il n'est possible de trouver sa signification, autant qu'on le prononce avec un *r* seulement, et même avec douceur. C'est une acception qui a disparu tout à fait. Deux chartes principalement, l'une de l'an 1153 de notre ère, l'autre de l'an 1048, démontrent que le mot *tor* signifie, emplacement bâti, ou à bâtir.”

Whatever may be the meaning of the word in the charters recited, there cannot be a doubt that the vocable *tor* in most local names is derived from the Latin *turris*, by change of radical, from the Hebrew צור, *tsur*, whence *Tsor* or *Sor*, the original name of *Tyre* (*Typos*). With regard to the word *ker*, we are informed that in the cartularies are found places named *Keros Albos*, *Ker Angle*, *Ker Monnos*, *Ker Ononino*, &c., &c.; that in the *délimitations de territoire*, the lines of rocks which form the natural divisions are called sometimes *rupes*, and sometimes *keros*, and our author thinks these demonstrations sufficient to establish the earliest signification of the vocables *tor* and *ker*. There is nothing new in all this; the vocable *ker*, which forms part of at least one thousand names in Europe, and of which at least five hundred may be discovered in Bretagne alone, is found variously written in all the Celtic dialects. Thus the Welsh has *caer*, a wall or mound for defence, the walls of a city, a castle or fortress, a walled or fortified town or city; the British *caer*, walls, and a city girt with walls; the Bas-Breton *ker*, *kear*, *kaër*, a town; the Cornish *caer*, a town, a castle, and *car*, a rock; the Gaelic, *càrr*, a rock; Sw., *skär*, a rock; Dan., *skier*, *skær*, rocks, cliffs. In the Hebrew, קיר, *kir*, or קר, *kir*, is a wall, i.e., the wall of a city, a place fortified with a wall, a fortress; proper name of a fortified city on the borders of the land of Moab, now Kerrek. Hence Kir-heres, Kir-heresh, the wall of bricks, or the brick-fortress; Kir-jath, &c.

The author of the paper adds: “Par ces deux mots (*tor* and *ker*) j'ai pris l'extrémité du fil conducteur qui m'a dirigé vers le pays anciennement connu sous le nom de *Kersonèse Torique*, et habité par une tribu scythe: les *Tauri*, d'après Hérodote; sur l'autorité duquel on admet que les *Cimmériens* possédaient avant eux cette péninsule, maintenant la *Crimée*.”

On this I will simply remark, that had M. du Roussillon only

consulted his Lexicon, he would have seen that the proper name, *Χερσονησος*, or *Χερνησος*, which in the Attic dialect is *Χερρονησος*, means a peninsula, and is derived from *χερρος*, *χερσος*, a continent, land, *νησος*, an island. The author of the paper seems to ignore altogether the fact that the ancients gave the appellation *Χερσονησος* to very many peninsulas, among the most celebrated of which were the Peloponnesus; the Thracian, at the south of Thrace; the Taurica, now the Crimea; the Cimbrica, now Jutland; and the Aurea, in India, beyond the Ganges. I may here remark that the word *ker* in Turkish signifies an uncultivated plain, but whether it always has that signification in local names is doubtful.

"Ainsi, la nomenclature des cours d'eau qui dépasse le nombre de 100, offre des significations qui tout répondent, à leur forme, à leur nature, à leurs défauts ou qualités, si on les traduit en langue romaine. Par exemple, une rivière qui porte l'ancien nom de la Crimée, le *Kerso*, que le cartographe Handtke a écrit [very properly too] *Karassu*, se compose de deux branches, l'une droite et l'autre tortueuse; cette dernière est appelée *Kutschuk*, mot qui se retrouve sur la carte, toutes les fois qu'il s'agit d'une ligne coudée. Or *Coutsout* signifie *coudé*, en catalan. L'autre porte le nom de *Béiouk*, toujours donné aux lignes droites, et se compose de deux mots: *bé*, qui signifie *bien*, et *jouke*, qui signifie il *perche* ou se *tient droit*, en parlant de volatiles de basse cour." It will be scarcely necessary to refute the above, when any one only superficially acquainted with the Turkish language must know that *kúchuk* means little, and *buják* great; terms more applicable to the branches of a river, or even to a river itself, than those given by our author. These words are frequently found in local names, as *Kúchuk koi*, the little village; and *Buyukdere*, the great valley, and *Buyuk Liman*, the great harbour, both on the Bosphorus. Other comparisons are given in this part of the paper, but as they are not, as I conceive, more reasonable than the above, I shall omit them, leaving the reader to compare them if he should think it worth while.

After stating, amongst other things, that the maps of the Crimea and parts of the coasts of the Sea of Azof and the Black Sea, by Handtke and others, give two thousand local names, our author says:—

"Il consiste à ne considérer que la valeur phonétique de chaque nom de lieu sans faire attention à l'orthographe, dans sa transcription, qui a lieu d'après les principes de l'orthographe romane et de la valeur idéographique qu'il offre dans cet idiome. A côté de cette

transcription j'ai porté la traduction en Français. Ici se présente tout naturellement la question suivante : est-il possible de prouver que les diverses combinaisons phonétiques de ces noms de lieu, supposés *scytho-cimmériens* d'origine, ont possédé lors de leur détermination une valeur idéologique tout à fait, ou du moins quasi-identique avec celle que je leur attribue dans la langue catalane ? Cette question trouvera sa réponse dans les démonstrations que contiendra la suite de mon mémoire. J'ai choisi cet idiome comme moyen d'interprétation, parce qu'il me paraît avoir conservé ses acceptions primitives beaucoup mieux que les dialectes provençal, languedocien, limousin ou autres.

"Je classe par mots à une, deux, trois syllabes et ainsi de suite. Je puis déjà mettre sous les yeux de mes lecteurs environ 700 noms contenus dans ces trois premières catégories, choisis presque tous dans les limites de la presqu'île *cimmérienne*. Je n'ai ajouté, de la carte à l'orthographe Française d'Andriveau Goujon, que des monosyllabes en fort petit nombre et des noms de rivière, le tout extrait des côtes de la Mer d'Azoff et de la Mer-Noire entre la Crimée et les bouches du Danube, que je n'ai pas dépassées.

"Il convient de remarquer d'abord que toute cette région n'offre qu'un nombre de lieux monosyllabiques bien restreint comparativement à celle des Pyrénées. Il ne s'élève qu'à trente environ ; lorsque nous avons d'autre part un chiffre presque quintuple, comment l'expliquer ?

"Je conjecture que lorsque les *Scytho-Cimmériens* émigrèrent vers l'Europe occidentale, ils vivaient encore à l'état nomade sur la péninsule et aux environs ; se servant d'un langage encore très-imparfait composé principalement de monosyllabes. Les émigrants, parvenus dans la région des Pyrénées, durent s'éparpiller sur le sol, choisir leurs lieux de résidence par groupes, s'y fixer et les dénommer, à une époque antérieure à celle où leurs compatriotes restés sur la sol de l'Europe Orientale ou de l'Asie firent plus tard comme eux. Alors, leur langage, qui dans un long intervalle s'était développé, comprenait déjà tous les polysyllabiques qui furent attribuées à leurs établissements, de fondation moins ancienne que ceux de l'Europe occidentale. Néanmoins, les deux peuples, maintenant divisés, développèrent leur idiome parallèlement, et suivant des combinaisons idéologiques et idéographiques à peu près semblables, parce que le sens de leurs radicaux primitifs était déjà déterminé lorsqu'ils se séparèrent.

"Ceci est fort hypothétique, j'en conviens, et ne peut être offert qu'à titre de conjecture tendant à expliquer un fait qui paraît anormal à première vue.

"En comparant entre elles deux listes de monosyllabiques si inégales en nombre, l'une de la région *cimmérienne*, l'autre des *Pyrénées*, on constatera que quelques-uns de ces noms de lieu se trouvent en même temps sur les deux nomenclatures. Ce sont *Ker*, *Cort*, *Llès*, *Cos*, *Boix*, *Aix* ; mots qui en catalan signifient *roc*, *cour*, *diligent*, *corps*, *buis*, *torche*. Nous trouverons presque tous les autres dans les combinaisons polysyllabiques. Ainsi la nomenclature des noms de lieu à deux syllabes situés dans les limites de la péninsule, qui s'élève à plus

de 300, contient 25 autres monosyllabiques des Pyrénées plusieurs fois combinés dans ces 300 mots. La nomenclature des noms de lieu à trois syllabes, qui dépasse le chiffre de 350, contient 36 monosyllabiques de la même liste des Pyrénées diverses fois et diversement combinés. Ainsi, sur un total en nombres ronds de 700 noms de lieu cimmériens, à une, deux et trois syllabes, nous trouverions 60 monosyllabiques Pyrénéens, c'est-à-dire la moitié environ de ceux que nous connaissons; cela constitue une proportion entre le 11^e et le 12^e. Elle me paraît suffisante pour établir une des bases de mon opinion. Il ne faut pas perdre de vue qu'il me reste encore à opérer sur les mots à 4 syllabes et au-dessus, au nombre d'environ 1300; je m'en occuperai avec d'autres questions dans la 2^e partie de mon mémoire. Comme quelques-uns constituent, pour ainsi dire, des phrases entières, tels que celui-ci par exemple, *ashi-bal-ak-bak-al*, que je traduis: 'ici le chemin conduit au coteau élevé opposé au soleil,' je ne m'en occupe pas encore."

Does M. du Roussillon mean to assert that because in Catalan the vocables *ker*, *cort*, *llès*, *cos*, *boix*, *aix*, signify *roc*, *court*, *diligent*, *corps*, *buis*, *torche*, that therefore places so named must have a similar meaning? Is it not possible to give such names a more reasonable meaning? May not *Lles* be the Gaelic and Irish *lios*, a court, palace, house, fortified place or castle; the Welsh *llys*, a court; the Cornish *llys*, a manor-house? Again, *cos*, in one Celtic dialect is a wood; the name *Boix* may be from *bois*, a wood; whilst *Aix* is more probably derived from the Latin *aquis*.

We now come to the most important part of the paper, containing seven hundred local and fluvial names in the Crimea and on the borders of the Black Sea, the Sea of Azof, the Danube and its vicinity, found in the charts of Handtke and Andriveau Goujon. The names of places in Handtke's map are respectively classed under monosyllabic, dissyllabic, and trisyllabic names, and are given in tables with the equivalents in Romance, and the meaning in French.* After a careful comparison of these names with the Turkish, Tatar, and Slavonic languages, I cannot have the least hesitation in asserting that not one of them has any connexion with the Romance languages, and that most of them are, as any one would naturally imagine, of Turkish or Tatar origin. Thus *koï*, in Turkish, is a village; nevertheless, according to the author of the paper, *Taschkoï* signifies *taxe au col*; *Tsalblakoï*, *sauve-le sur le col*; *Duwan-koï*, *chargent à dos*; *Hadshikoï*, *ici transport à dos*; *Otarrrkoï*, *y porte*

* The names of capes, coasts, rivers, mountains, ponds, etc., from both maps are arranged without reference to the number of syllables, which in some reach to six.

la terre à dos; *Aramkoï*, fagots sur le col; *Salankoï*, compagnie qui sale; *Tontschikoï*, pied de chou; *Mursakoï*, gazon jusqu'à col; *Dermenkoï*, dormant par troupe; *Jenikoï*, y attèle des hommes; *Tatarkoï*, teter sur le col; *Kutschukkoï*, défilé tortueux; *Koïhassann*, col ensanglante; *Derekoï*, dernier défilé; *Kadikoï*, chef de troupe; whereas the six latter names really mean in Turkish nothing more than 'new village', 'Tatar village', 'little village', 'village of Hassan', 'village in the valley', 'village of the Kadi'. Again, the Turkish *ak* is white, and *kara* is black (also a continent); thus, *Ak-su* signifies the white water; *Ak-dengiz*, the white sea, i.e., the Mediterranean; *Ak-kerman*, the white fortress or town; *Kara-dengiz*, the black sea; *Karachaï*, the black river. Let us see how our author deals with names, as I say, compounded of these vocables. *Akkkaja*, is rendered à la maison; *Akktchora*, au sable; *Akkbasch*, au bas; *Akkkhuya*, au testicule; *Akkburunn* (properly white cape), au rocher qui brille; *Karagarr*, charger; *Karagatsch*, chargés; *Karabaï*, usage bas; *Karalarr*, usage longue; *Karagoss*, pesant; *Karatschaï* (i.e., Karachaï), ail tresse; *aradscha*, traîner ou (charrier); *Tschat kara*, se compare à toi; *Karamusch*,* face flasque; *Karamysch*, face à moitié; *Kyschkara*, qui fait place; *Kotschkara*, couche de face. *Bûrun* in Turkish is a cape; as *Akburun*, the white cape; *Filburun*, the elephant cape, on the Asiatic side of the Bosphorus; but M. du Roussillon renders *boroun*, bourgeois; *Akkburunn*, un roche qui brille; *Burundukk*, je porte des bourgeois; *Kilburunn*, pousse de bourgeois, and *Kurtyriburunn*, caverne d'éruptions volcaniques. *Dere* is rendered derrière, whereas *dereh* in Turkish signifies a valley; as *Buyukdere*, the great valley, whence Baron *Grosthä* had his title. *Ardussu* is said to mean, entraîne avec lui; *Ssubasch*, baisse; *Sojukkssu*, sous le confluent; *Bojukkkarassu*, droit rocailleux; and *Kutschukkarassu*, condé rocailleux; whereas every Turkish scholar must know that the former means the Great, and the latter the Little, *Kara Su*, or black water (*sû*, water). The *Boghass* is rendered, plein de plantes marécageuses; but the Turkish *bôghaz* is a strait. The Bosphorus is called in Turkish *Dengiz Bôghâzî*. *Gûl* in Turkish is a lake; whereas, the water-course called *Tsaregol* is rendered, sable au gué; *Baïgull*, cri; and *Aïkugul*, au cocu. Again, *Jailadagh* is translated, lieu glacial; *Pakalldagh*, lieu où le pain manque; and *Karadagh*, amas de rochers; but the termination of these names, *dâgh* (for *tâgh*), signifies a mountain; and *Karaddâgh*, means black mountain. *Ssaraï*, is rendered, sommet élevé, and *Bielosaraï*, dirige le sable; whereas the Turkish word *saraï* is a

* Why not derive it from *Scaramouch*?

palace (*seraglio*); and *Bielosarai* denotes the white palace; hence *Bielogorod*, *Ak-Kerman*, the white town; *Belgrade* on the Danube, and, among other names, the Russian lake *Biélo Ozéro*. *Kisilbai* is rendered, *je pousse à danser*, (!!!) nevertheless, *kizil*, in Turkish, means red: as *Kisil Irmak*, the red river, which falls into the Black Sea near Sinope. *Fanar* is translated, *travailler vite*, or *font des filets*; but *fanar*, in Turkish, means a lantern, and the word is applied to a light-house. Any one who has been in Constantinople will remember the quarter called *Fanar*, where the Patriarch and principal Greek families reside. There is a place called *Fanaraki*, i.e., *Fanar Koi*, the "village of the lighthouse," at the extreme point of the European side of the Bosphorus, whilst on the opposite shore is *Fanaraki*, in Asia, so called from another light-house, which points out to navigators the mouth of the Bosphorus. Again *Muschai* is translated *moustique*, whereas *chai* signifies, in Turkish, a river, and *Muschai* more probably signifies ice river, just as *Mustag*, properly *Müstâgh*, means ice mountain. Ignoring altogether the fact, that the vocable *cern*, *zern*, *tzern*, *tchern*, in the Slavonic languages signifies black, and that this vocable is found in very many local names, as *Czernawoda*, the black water; *Czerna*, a river of Austria, which falls into the Danube; *Czernowitz* or *Tchernowitz*, a town of Austrian Galicia; *Czernigov* or *Tchernigov*, a town and government of Russia; *Tchernoyarsk*, a town of Russia; and *Tchernagora*, the Slavic name of Montenegro, which the Turks call *Karadâgh*; M. du Rousillon renders *Tchernaja*, on *rétrécit la*; and *Inkerman* is translated *commande dans le rocher*; whereas the name means, the town of caverns (*in-kerman*), just as *Ak-kerman* means the white city. *Alataï* is rendered, *à la coupe*; whereas in Tatar it is *Alatau*, most probably from *al-tâgh*, high mountain; *Staryi Krimm* is translated, *que le crin reste*, or *rester en Crimée*, nevertheless *Staryi Krimm* or *Krim Staroi* means Old Crim, from the Slavonic *star*, old (whence *Stargard*, ancient city.) The Turks and Tatars also call it *Eski Krim*, of the same meaning in Turkish.* Our author derives *Perecop* from *pera cop*, pierre à coup. It is rather a Slavonic name, denoting a cut made through a place, and is applicable to the ditch dug here in remote ages across the neck of land at the entrance to the Crimea, for the security of the place.† *Esskenderr* is rendered, *amorcent de l'aire*, but *Iskender* is the Turkish form of Alexander, whence *Iskenderoun*,

* Esski is rendered "je mets d'appât" and "jamorce dehors".

† Pallus derives the name from a Russian word signifying "the entrenchment of the isthmus".

Ascanderoon, or *Scanderoon*, i.e. *Alexandretta*, in Syria, and *Isken-dériyeh*, i.e. *Alexandria*, in Egypt. Finally, the river *Danube* is rendered *donne mari*; the *Don*, femme; and the *Dnieper* ou *Borysthene*, perd le nied, ou tient dans ses bords; whereas *don* is a Scytho-Celtic word found in the names of hundreds of European rivers, signifying water, whence the *Donau* or *Danube*, *Tunbridge* or *Tonbridge*; the rivers called *Don* in Great Britain; *Tunstall*, *Tunstead*, etc.; while *Dnieper* is from *don-ieper*, the upper river, in contradistinction to *Dniester* or *Niester*, the lower river (*don-iest*er).

The drollest part of the pamphlet is the conclusion, in which are given the Gaulish and German proper names, mentioned in *Cæsar's Commentaries*, amounting to sixty-seven, "avec leur signification approximative en Roman et traduction française en regard." As a specimen of these, with their supposed significations, let us select the following:—*Ariovist*, "vu à la rivière," (*a riou bist*); *Acco*, "cela," (*aco*); *Critognatus*, "j'appelle les enfants," (*grito nats*); *Adcantannus*, "je chante les années," (*al cant anys*); *Bellovesus*, "tu baises la toison," (*bello besec*); *Beduognatus*, "porte bien les enfants," (*be dou nats*); *Cassivellaunus*, "je cherche des noisettes," (*caci bellanas*); *Camulogenus*, "chien qui chasse le public," (*ca mou lo gens*); *Catamanteles*, "abaisse les manteaux," (*cata mantels*); *Cativulcus*, "chat tu y tombes," (*cat y boulques*); *Cavarinus*, "travaille les raisins," (*caba rims*); *Cingetorix*, "riche sans un seul jeton," (*sin jeto rio*); *Convictolitanis*, "j'invite les biches," (*convido les daynes*); *Corbeus*, "le bruit court," (*cort beus*); *Emporedorix*, "empereur riche," (*emperado ric*); *Galba*, "voici les réjouissances," (*gale ba*); *Gobanitio*, "nettoie la caverne," (*coba neteje*); *Iccius*, "sortez," (*ixius*); *Induciomarus*, "conseille les mères," (*inducix maras*); *Liscus*, "tu glisses," (*llisques*); *Litavicus*, "que tu vive alité," (*llitat bisques*); *Mandubratius*, "je dirige les échanges," (*mandou baratas*); *Moritasgus*, "impôts sur les morts," (*mori tasques*); *Ollovico*, "vive la marmite," (*oulla visque*); *Piso*, "voies urinaires," (*pizo*); *Sigovesus*, "tu répands le blé sous ta faucille," (*cega bessas*); *Taximagulus*, "je taxe mes bouches à nourrir," (*taxi mas goulous*); *Teutomatus*, "tu brises tout," (*tout o matas*); *Vercingetorix*, "vrai riche sans un jeton," (*ber sin jeto ric*); *Vergasillaunus*, "bâtons à lancer," (*bergas a llans*); *Viridovix*, "je quitte le vice," (*biri dou bici*); *Viridomarus*, "je quitte les mers," (*biri dou mars*); *Vocio*, "félonie," (*baüisia*).

The principal difficulties we have to encounter in the endeavour to translate old Gaulish and old German proper names are, 1st, that of

ascertaining their original orthography before they became Latinised. 2ndly, The necessity of a thorough acquaintance with the old German and Celtic languages. Having some acquaintance with these languages, I will endeavour to account for a few of the above names, premising that all those commencing with *cat* and *cass*, are from the Celtic *cat*, war; and those compounded of *ver* from *fear*, a man, a hero. Ariovist means "strong or intrepid in battle," (*ar-vist*); Bellovesus, a "war leader," (*O.G.-fel-wiso*); Sigovesus, a "leader of victory," (*sieg-wisa*); Litavicus, a "strenuous warrior," (*leut-wig*); Teutomatus, a "good, virtuous, or excellent man," (*teut-math*); Ollovico (the modern Helwig), "very strenuous, valiant, or strong," (*O.G.-oll-wig*); Galba, "vigorous, strong, brawny," (Gael, *galba, galbha*); Eporedorix, "chief of the horse-cars, or chariots," (*eb-rhed-rix*); Camulogenus would seem to be compounded of the British name Camulus; Induciomarus is doubtless the same as Inguio-merus, signifying "celebrated youth," (*ing-mer*); whilst Mandubratius is probably of the same meaning as Vergubretus, a "judge," literally a "man for judgment," (*fear-gu-breith*).

NOTES ON SCALPING.

By RICHARD F. BURTON.

It is generally, but falsely, supposed that only Americans scalp; the practice is Asiatic, European, and African. The underlying idea is the natural wish to preserve a memorial of the hated foeman done to death, and at the same time to dishonour his foul remains. Fashion and tradition regulate the portion of the human frame preferred: the most popular is doubtless that which, beginning, we are told, with David, has descended through the Jews to the eastern Christians and the Moslems of the present day.

Concerning Asiatic scalping we read as follows in Herodotus, (*Melpomene*, iv., 64, Laurent's translation). "Of the first enemy a Scythian sends down, he quaffs the blood; he carries the heads of all that he has slain in battle to the king; for when he has brought a head, he is entitled to a share of the booty that may be taken: not otherwise. To skin the head, he makes a circular incision from ear

to ear, and then, laying hold of the crown, shakes out the skull. After scraping off the flesh with an ox's rib, he rumples it between his hands; and having thus softened the skin, makes use of it as a napkin; he appends it to the bridle of the horse he rides, and prides himself on this: for the Scythian that has most of these skin napkins is adjudged the best man," etc. etc. "They also use the entire skin as horse cloths, also the skulls for drinking cups."

The Abbé Em. Domenech (*Seven Years Residence in the Great Deserts of North America*, chap. 39), quotes the "decalvare" of the ancient Germans, the "capillos et cutem detrahere" of the code of the Visigoths, and the annals of Fluor, to prove that the Anglo-Saxons and the French still scalped about A.D. 879.

And as the modern American practice is traceable to Europe and Asia, so it may be found in Africa, where ought of ferocity is rarely wanting. "In a short time after our return," says Mr. Duncan, (*Travels in Western Africa in 1845 and 1846*), "the Apademey regiment passed, on their return, in single file, each leading in a string a young male or female slave, carrying also the dried scalp of one man supposed to have been killed in the attack. On such occasions, when a person is killed in battle, the skin is taken from the head and kept as a trophy. (It must not be supposed that the female warriors kill according to the number of scalps presented; the scalps are the accumulation of many years. If six or seven men are killed during one year's war, it is deemed a great thing; one party always run away in these slave-hunts, but when armies meet the slaughter is great). I have seen 700 scalps pass in this manner."

Scalp-taking in America is a solemn rite. In the good old times men scrupulously awaited the wounded man's death before they "raised his hair;" in the laxity of modern days, however, this humane custom is too often disregarded. Properly speaking, the trophy should be taken after fair fight: this also is now neglected. When the Indian sees his enemy fall, he draws his scalp-knife—the modern is of iron, formerly it was of flint, obsidian, or other hard stone—and twisting the scalp-lock, which is left long for that purpose and boastfully braided or decorated with some gaudy ribbon or with the lone eagle's plume, round his left hand, marks with the right two semi-circular incisions, with and against the sun, about the part to be removed. The skin is next loosened with the knife point, if there be time to spare and much scalp is to be taken. The operator then sits on the ground, places his feet by way of leverage against the subject's shoulders, and holding the scalp-lock with both hands, he applies a

strain which soon brings off the spoils, with a sound which, I am told, is not unlike "flop." Without the long lock it would be difficult to remove the scalp. Prudent white travellers are careful, before setting out through an Indian country, to "shingle off" their hair as closely as possible; the Indian warrior hardly cares for a half-fledged scalp. To judge from the long war-locks affected by the hunter and mountaineer, he seems to think lightly of this precaution, and to hold it in fact a point of honour that the savage should have a fair chance. A few cunning men have surprised their adversaries with wigs. The operation of scalping must be exceedingly painful: the sufferer tosses, wriggles, and "squirms," upon the ground like a scotched snake. It is supposed to induce brain-fever: many instances, however, are known of men and women recovering from it, as the former do from an even more dreadful infliction in Abyssinia and Galla-land; cases are, of course, rare, as a disabling wound is generally inflicted before the bloodier work is done.

After taking the scalp, the Indian warrior, proud as if he had won a "*médaille de sauvetage*," prepares to return to his native village. He lingers outside for a few days, and then, after painting his hands and face lamp black, appears slowly and silently before his lodge. There he squats for a while, his friends and relatives, accompanied by the elders of the tribe sit with him, dumb as himself. Presently the question is put: it is answered with truth, though these warriors will at other times lie like Cretans. The "coup" is recounted, however, with abundant glorification—the Indians, like the Greeks and Arabs of their classical ages, are allowed to vent their self-esteem on such occasions, and to enjoy a treat for which the civilised modern hero longs ardently, but in vain. Finally, the "green scalp," after being dried and mounted, is consecrated by the solemn dance, and becomes fit for public exhibition. Some tribes attach it to their horses' bridles, others to their tergas, whilst others ornament with it the outer seams of their leggings. The more scalps the more honour. The young man who cannot boast of a single murder, or show the coveted trophy, is held in such scant esteem as the English gentleman who contents himself with being passing rich on £100 a year. Some great war-chiefs have collected a heap of these honourable spoils. It must be remembered by curiosity hunters that only one scalp can come off one head: namely, the centre-lock or long tuft growing upon the coronal apex, with about three inches in diameter of skin. This knowledge is the more useful as the western men are in the habit of manufacturing half a dozen, but from different parts of the same head. They sell

readily for fifty dollars each; but the transaction is not considered respectable. The American, however, readily distinguishes the real article from "false scalping," by the unusual thickness of the cutis, which is more like that of a donkey than of a man; set in a plain gold circlet it makes very pretty brooches. Moreover, each tribe has its own fashion of scalping, derived from its forefathers. The Sioux, for instance, when they have leisure to perform the operation, remove the whole headskin, including a portion of the ears: they then sit down and dispose the ears upon the horns of a buffalo skull, and a bit of the flesh upon little heaps of earth or clay disposed in given ways, apparently as an offering to the manes of their ancestors, and they smoke ceremoniously, begging the Manitou to send them plenty of scalps. The trophy is then stretched upon a willow twig, bent into an oval shape and lined with two semi-ovals of black or blue and scarlet cloth. The Gutas and the Prairie tribes generally, when pressed for time, merely take off the poll-skin that grows the long tuft of hair, while the Chyuagara, or Nez Percé's, prefer a long slip about two inches wide, extending from the nape to the connection of the hair and forehead. Indians are aware of the aversion with which the pale-face regards this barbarity. Near Alkali Lake in the valley of the Plate River, where there was a large "Lakotu Tipi"—encampment of Sioux—I tried to induce a tribesman to go through the imitation process before me; he refused with a gesture, indignantly repudiating the practice. A glass of whisky would doubtless have changed his mind, but I was unwilling to break through the wholesome law that prohibits it.

RENAN ON THE SHEMITIC NATIONS.*

THE attention which has been paid by modern anthropologists to the Shemitic school of thinkers, and to those vague traditions which are wafted to us from the shores of Syria, the plains of Padan Aram, or the banks of the Euphrates, is now beginning to produce its good fruits; and the controversies of Chwolson, Quatremère, and Renan as

* An Essay on the Age and Antiquity of the Book of Nabathæan Agriculture; to which is added an Inaugural Lecture on the Position of the Shemitic Nations in the History of Civilisation. By Ernest Renan, Membre de l'Institut; Hon. Fellow of the Anthropological Society of London, etc. 12mo. Trübner: 1862.

to the age and authenticity of *The Book of Nabathæan Agriculture* has produced a beneficial influence over the thoughts of Europe.

The work entitled *The Book of Nabathæan Agriculture* is alluded to both by S. Thomas Aquinas and Moses Maimonides. Upon the assumption that it was a genuine document, it was a translation made by Ibn Walshiya al Kasdani, a Mussulman, in A.D. 904, from a Chaldean manuscript, by an author named Kúthâmi. Quatremère considers that Kúthâmi flourished about the reign of Nebuchadnezzar the Second. Meyer, the botanist, of Königsberg, however, assigned its date to the first century of our era. Professor Chwolson, of St. Petersburg, however, considers it extremely probable that the period when Kúthâmi, the Babylonian, wrote *The Book of Nabathæan Agriculture* was certainly not later than B.C. 1300.

The contents of this book, on the presumption of its antiquity, give the most remarkable ideas as to the literature of Babylon, and of the founders of the various Chaldean religions. According to M. Renan's account :

"In the foreground appears the chief personage of Babylonian literature, a certain Yanbúshádh, founder of natural sciences and originator of a kind of Monotheism. He is separated from Kúthâmi by four or five centuries. Some ages before Yanbúshádh, appears Daghrith, founder of another school, which had some disciples, even after Yanbúshádh. This Daghrith lived, according to Dr. Chwolson, two thousand years before Christ; and speaks of various persons of Babylonian tradition in a manner which shows that he then considered them as men of early antiquity. Indeed, long before Daghrith, there is another age of literature, of which the representatives are Mási the Suranian, his disciple Jernáná, and the Canaanites, Anúhá, Thámithrí, and Sardáná (towards 2500). All these sages appear at once as priests, founders of religions, moralists, naturalists, astronomers, agriculturists (*agronomes*), and as universally endeavouring to introduce a worship freed from idolatrous superstitions. A short time before them Ishíthá flourished, the founder of a religion which Kúthâmi vehemently opposes, though he acknowledges that it exercised, in his own time, a salutary influence. Before Ishíthá, Adami appears as the founder of agriculture in Babylon, acting the part of a civiliser (*civilisateur*) and hence named 'The Father of Mankind.' Before him we find Azada, the founder of a religion which the higher classes persecuted, but which was cherished by the lower; Ankebúthá, Samái-Nahari, the poet Húhúshi, whose attention was already directed to agricultural science; Askúlebithá, a benefactor of mankind and the earliest astronomer; and finally, Dewánái, the most ancient lawgiver of the Shemites, who had temples, was honoured as a god, and was called 'Master of Mankind.' The age of Dewánái is, according to Dr. Chwolson, strictly historical, and Babylon was already, at that time, a completely organised state. There are indications, before

Dewánái, of great efforts towards civilisation ; and it is in that distant period that Professor Chwolson places Kámash-Nahari, the author of a work on agriculture ; the saints and favourites of the gods, Aámi, Súlina, Thúlúni, Resái, Kermáná, etc. ; and finally, the martyr Tam-múzi, the first to found the religion of the planets, who was put to death, and afterwards lamented by his followers. Dr. Chwolson stops here ; he acknowledges that before that period all fades into the mist of fabulous antiquity."

Professor Renan, however, does not assign any very high antiquity to the work. The frequent references in it which are made to the Greeks or Ionians (*Yúdnis*), the use of the term Antioch (*Anthakia*), the mention of such Neoplatonic ideas as those of Hermes (*Armísá*) and Agathodæmon (*Agháthádimún*), the allusion to Æsculapius (*Ἀσκληπιός*) under the name of *Askolábita*, the statement that the Pehlevi language existed as a Persian dialect in the time of Kúthámi, the manifest acquaintance which the author possessed with the Zend Avesta, the allusion to Indian civilisation, and many other passages, exemplify the contact of the Nabathæans with a high and a late civilisation. To take one allusion which is made to Jewish tradition :

"There are persons who believe that the Chaldæans began the attack on the Assyrians ; but it is not so. The Assyrians, in fact, are not of the race of Adam, while the Chaldæans are his descendants. Thus, the language of the Assyrians, and the names by which they call different objects, cannot be older than Adam, who first gave to everything its name, and was the first who established and organised language itself. Therefore it is not the Chaldæans whom the Assyrians oppose, but Adam ; for Adam named this plant *akermaï*. Now, it is universally acknowledged that what Adam ordained is true and wise ; and what others have ordained is without foundation. Then, too, the Assyrians are the children of Shabrikan the First, who is neither comparable nor equal to Adam, and who cannot even come near to him."

"These two nations (the Canaanites and the Chaldæans) are descended from two brothers, both sons of Adam, and of the same mother, one of the wives of Adam ; for Adam, according to those skilled in genealogy, had sixty-four children, of whom twenty-two were daughters and forty-two sons. These forty-two sons left eighty heirs. The others had no posterity which has descended to our times."

The Jewish influence is thus strongly manifest in the thoughts of the old Nabathæan. But the allusions to the early Hebrew patriarchs are most frequent :

"One of the ancient sages who fills the most important part in 'The Book of Nabathæan Agriculture' is Adami. Adami was considered as the founder of agriculture in Chaldæa ; to him are attributed

certain books of which Kúthámí doubts the authenticity, and which he found altered or interpolated. . . . We know that many apocryphal writings were attributed to Adam, that the Mendaïtes ascribed their chief book to him, and that the ancient Sabians had books under his name. Our Adami is thus most undoubtedly the Adamas or apocryphal Adam of the Babylonian sects. Can there remain any doubt about this identity, when it is seen that Adam bears, in *The Agriculture*, the title of *Father of Mankind*, a title which all the Moslem East gives to Adam."

"Ishítha, the son of Adami, described as a religious legislator, as the founder of astrology and of astrolatria, is undeniably Seth. . . . Akhnúkha or Hánúkhá is Enoch."

"Anúhá, the Canaanite, another of the founders, represented as the apostle of Monotheism, is undoubtedly Noah. Indeed, a great deluge happened in his time. Moreover, Anúhá planted the vine, and he is always cited as an authority in speaking of the making of wine. Finally, Ibrahim, the Canaanite (that is to say of Palestine), is certainly, in spite of what Dr. Chwolson says about it, the patriarch Abraham.

"As to the part which Númrúda plays in *The Book of Nabathæan Agriculture*, as a Canaanite priest, and as founder of the Canaanite dynasty at Babylon, it would be presumptuous to say that this idea only has its origin in a plagiarism from the Bible. It is very possible that there might be some national tradition respecting him. Nimrod, as we shall presently see, was a popular personage in Chaldaea in the first centuries of our era. It is difficult to unravel, amidst the confusion of ideas which then prevailed in the East, the origin of legends so denuded of true character, and over which is thrown that general level of mere platitude which gives such a singular air of monotony and conventionalism to all the traditions transmitted to us by Arabian writers."

The manner in which some of these patriarchs are described in the genethliologic work *On the Secrets of the Sun and Moon* is very amusing. This work sets forth the opinions of the pretended Babylonian sages, Adámi (Adam) Ankebúthá and Askolábíta (*Æsculapius*), on the artificial production of living beings. They were, figuratively speaking, the Pasteurs, Schultzes, and Pouchets of their day. The miracles of *Æsculapius* and the wonders of Adam, however, sink into insignificance before the feats of their colleague, Ankebúthá. This heterogenetic *savant* outdid Prometheus or Frankenstein. He succeeded in forming a man, and kept him alive for a year. Another rival advocate of spontaneous generation under difficulties also succeeded in the same experiment, but the king, for political reasons, forbade him to repeat it. It would be highly inconvenient to increase a surplus population in this manner.

The work of "Tenkelúshá, the Babylonian, the Kukanian," belongs to the same date. The author, however, is proved to be com-

paratively modern by the researches of Salmasius.* Salmasius says, "Tenkelus ille Babylonius quem memorat Nasirodinus (*i.e.* Nasireddin Tousi) is omnino est qui *Τεύκρος Βαβυλώνιος* Græcis vocatur, et fortasse in scriptis Græcorum perperam hodie legitur *Τεύκρος* pro *Τένκρος*, idque deflexum ex illo nomine Babylonio Tenclus." The author of this Helleno-Babylonish treatise was consequently named Teucer.

Yarbúká was the author of a *Book of Poisons*, perhaps contemporary with the other writers. M. Renan thus sums up the whole investigation :

"One deduction appears to me to arise from the analysis to which we have subjected *The Book of Nabæathan Agriculture*, and the other Nabathæan writings, and that is that the school to which they belong, taken altogether, cannot be anterior to the third or fourth century of our era ; and that the literary movement which they suggest as earlier, does not allow us to place it before Alexander."

The more interesting part, however, of the present work is the copy which is given of Professor Renan's inaugural lecture on the Shemitic nations. A few extracts only are all we can give of this eloquent oration. It should be read throughout to be actually appreciated :

"The most important results to which historical and philological science has arrived during the last half century, have been to show, in the general development of our races, two elements of such a nature which, mixing in unequal proportions, have made the woof of the tissue of history. From the seventeenth century—and, indeed, almost from the middle ages—it has been acknowledged that the Hebrews, the Phœnicians, the Carthaginians, the Syrians, the Babylonians (at least from a certain period), the Arabs, and the Abyssinians, have spoken languages most intimately connected. Eichhorn, in the last century, proposed to call these languages Shemitic, and this name, most inexact as it is, may still be used.

"A most important and gratifying discovery was made in the beginning of our century. Thanks to the knowledge of Sanscrit, due to English scholars at Calcutta, German philologists, especially M. Bopp, have laid down sure principles, by means of which it is shown that the ancient idioms of Brahmanic India, the different dialects of Persia, the Armenian, many dialects of the Caucasus, the Greek and Latin languages, with their derivatives, the Slavonic, German, and Celtic, form one vast family entirely distinct from the Shemitic group, under the name of Indo-Germanic or Indo-European.

"The line of demarcation, revealed by the comparative study of languages, was soon strengthened by the study of literatures, institutions, manners, and religions. If we know how to assume the right point of view in such a careful comparison, it is seen that the ancient literatures of India, Greece, Persia, and the German or Teutonic

* De Annis Climacteris, et Antiqua Astrologia. Leyden : 1648.

nations, are of a common stock, and exhibit deeply rooted similarity of mind. The literature of the Hebrews and that of the Arabs, have much in common; while on the contrary they have as little as possible with those which I have just named. We should search in vain for an epic or a tragedy among the Shemitic nations; as vainly should we search among the Indo-Europeans nations for anything analogous to the *Kasida* of the Arabs, and that species of eloquence which distinguishes the Jewish prophets and the Koran. The same must be said of their institutions. The Indo-European nations had, from their beginning; an old code, of which the remains are found in the Brahmanas of India, in the forms of the Romans, and in the laws of the Celts, the Germans, and the Slaves; the patriarchal life of the Hebrews and Arabs was governed, beyond contradiction, by laws totally different. Finally, the comparison of religions has thrown decisive light on this question. By the side of comparative philology in Germany there has of late years arisen the science of comparative mythology, which has shown that all the Indo-European nations had, in their beginning, with the same language also the same religion, of which each carried away scattered fragments on leaving their common cradle; this religion, the worship of the powers and phenomena of Nature leading by philosophical development to a sort of Pantheism. The religious development of the Shemitic nations obeyed laws totally different. Judaism, Christianity, Islamism possess a character of dogmatism, absolutism, and severe monotheism which distinguishes them radically from the Indo-European,—or, as we term them, the Pagan religions."

The accuracy of the following deduction can only be appreciated by the student who may have passed weeks in Mohammedan society :

"The Indo-European and the Shemitic nations are in our day still perfectly distinct. I say nothing of the Jews, whose singular and wonderful historical destiny has given them an exceptional position among mankind, and who, except in France, which has set the world an example in upholding the principle of a purely ideal civilisation, disregarding all difference of races, form everywhere a distinct and separate society. The Arab, and, in a more general sense, the Mussulman, are separated from us in the present day more than they have ever been. The Mussulman (the Shemitic mind is everywhere represented in our times by Islamism) and the European, in the presence of one another, are like beings of a different species, having no one habit of thought and feeling in common. But the progress of mankind is accomplished by the contest of contrary tendencies; by a sort of polarisation, in consequence of which each idea has its exclusive representatives in this world. It is as a whole, then, that these contradictions harmonise, and that profound peace results from the shock of apparently inimical elements."

Professor Renan, in the endeavour to seek out what the Shemitic nations have contributed towards the civilisation of the world, points out that in Political Economy we owe them nothing :

"In Art and Poetry, what do we owe to them? Nothing in Art. These nations have but little of Art in them; our Art comes entirely from Greece. In Poetry, however, without being their dependents, we hold in common with them more than one point of resemblance. The Psalms have become, in some respects, one of our sources of poetry."

"In Science and Philosophy we are exclusively Greek. The search into causes, knowledge for the sake of knowledge, is a thing of which there is no trace previous to Greece; a process we have learnt from her alone. Babylon had Science, but not the real element of science, an absolute fixidity of the laws of Nature. Egypt had knowledge of geometry, but she did not produce the Elements of Euclid. As to the old Shemitic mind, it was in its nature anti-philosophical and anti-scientific. In Job, the search into causes is almost represented as impiety. In Ecclesiastes, science is declared a vanity. The author, prematurely disgusted, vaunts his having learnt all that is under the sun, and of having found nothing but weariness. Aristotle, nearly his contemporary, and who had more right to say that he had exhausted the universe, never speaks of weariness. The wisdom of Shemitic nations never rises above parables and proverbs. Arabian science and Arabian philosophy are often alluded to, and, in fact, during one or two centuries in the middle ages, the Arabs were our teachers; but it was only until we were acquainted with the Greek originals. This Arabian science and philosophy was only a puerile rendering of Greek science and philosophy. From the time when Greece herself reappeared, these pitiful versions became valueless; and it was not without cause that all scholars at the revival of letters commenced a real crusade against them. When closely examined, moreover, the Arabian science has nothing Arabian in it. Its foundation is purely Greek; among its originators there is not a single true Shemite; they were all Spaniards and Persians who wrote in Arabic. The philosophical part filled by the Jews in the middle ages was that of simple interpreters. The Jewish philosophy of that period is Arabian philosophy, without modification. One page of Roger Bacon contains more of the true spirit of science than all this second hand knowledge, devoid of true originality, and respectable only as a link in the chain of tradition. If we examine the question in a moral and social point of view, we shall find that Shemitic morality is at times very high and very pure. . . . As regards industry, invention, material civilisation, we owe, beyond contradiction, much to the Shemitic nations."

He sums up thus:—

"We do not owe to the Shemitic race our political existence, our Art, our Poetry, our Philosophy, nor our Science. For what, then, are we indebted to it? We owe to them Religion. The whole world, with the exception of India, China, Japan, and nations yet altogether savage, has adopted Shemitic religions. The civilised world numbers only Jews, Christians, and Mussulmans. The Indo-European race, in particular, except the Brahmanic family and the feeble remnants

of the Parsees, has passed entirely over to Shemitic creeds. What has been the cause of this remarkable phenomenon? How is it that nations, which hold the guidance of the world, have abdicated their own creed to adopt that of those whom they have overcome?"

The reasons which Professor Renan assigns for this fact must be read in Mr. Trübner's excellent translation. Professor Renan's concluding remarks will re-echo a sentiment of admiration in the minds of all sincere anthropologists, who study their noble science without *a priori* prejudices, or cringing concessions in favour of unscientific assumptions.

INHERITANCE OF AN ABNORMAL DISTORTION OF THE WRIST.

By CHARLES H. CHAMBERS.

SOME remarks of Dr. Waitz upon the persistency of deviations from normal forms in various races or groups of mankind, have made me think it worth while to communicate a fact which came under my notice some years since, and which, as the evidence on the subject is accumulative, is not I think unworthy of being signalised. I happened three years since to be in the Shetland islands; I was at a place in the south of the mainland, called Koningsborough, and one day, having seen the herring boats take their departure, was returning home, when I was accosted by a fisherman, who asked me to give him advice about his son who had had a dangerous fall from some cliffs. I assured him I was neither a physician nor surgeon, but he still insisted upon it, and I examined the boy's arm which, though bruised, was unbroken; I remarked that it was, as I thought at first, dislocated, but, on further examination, found that what I imagined was dislocation was an abnormal growth of the bone above the joint which projected to the height of nearly three-quarters of an inch; finding that it was a bruise, I said I would send down an embrocation from Lerwick, and on getting to it I went to the medical man there and told him of the case. When I mentioned this abnormal growth, he said that that was not singular there, as he had remarked that bony excrescence on the wrist in very many of the natives. There is no doubt a great deal of intermarrying among relations, and it is possible that an accidental deformity has, in this way, become perpetuated among the natives of the islands.

HUMAN REMAINS IN LOUGH GUR, COUNTY LIMERICK.

IN the *Reader* of January 23rd, appears the abstract of a paper, read by Dr Carte, before the Geological Society of Dublin, on the 13th of January, "On the Recent Discovery of Bones of the Polar Bear in Lough Gur, County Limerick; with observations on their comparison with Bones of the Cave Bear in the Collection of the Earl of Ennis-

killen." The facts by Dr. Carte were corroborated by Prof. Jukes, Mr. Blyth (of Calcutta), and the Rev. Dr. Houghton. The most interesting anthropological fact was disclosed by Mr. Scott, who said, "that two distinct kinds of human remains had been found in Lough Gur. One of these was evidently very ancient. There was a skull, however, which did not appear to have been very long in the lake. He would ask anatomists to say whether some of the skulls found in the lake did not point to the existence in Ireland, at a remote period, of a race totally distinct from its present inhabitants. Dr. Blyth stated that there was not *sufficient* of the skull remaining to warrant an opinion being formed." The *Reader* goes on to add, "subsequently, however, we learn that that gentleman has been shown a fragment of an ancient Irish human skull, with wide glabella and prominent frontal sinuses, which he thought there could be little doubt appertained to the now Arctic race of mankind, which is known as the hyperborean Mongol." This fact is most interesting to anthropologists. The skulls which we have seen from the "river beds" of Ireland, and especially from the river Blackwater, and from Bovies on the river Nore, present a type very distinct from that of the "Mongol," or from the brachycephalic "stone period" skulls. They belong to the same great group of skulls as the specimens from Muskham (Trent valley), Towyn-y-capel in Anglesea, and other localities, some of which have been described by Prof. Huxley, or by Mr. Carter Blake (*Geologist*, June, 1862). Our attention has been long drawn by Mr. W. Davies, of the British Museum, to the remarkable variation in the proportions of bones of cave-bear from various deposits, and we hope that some of them may be carefully compared with *Thalarcos maritimus*.

THE DANISH KITCHEN MIDDENS.

To the Editor of the Anthropological Review.

SIR,—As I was returning from a stay of some months in Norway, in the year 1857, I went to Copenhagen. The first object of my devotion was Thorwaldsen and his mausoleum, which, as most of your readers are aware, contains a complete collection of his works exactly copied in marble, as well as some of the originals, while some of his most famous works are in the town. My next was the fine ethnographic collections, especially of northern antiquities. I was also anxious to see Professor Worsaae. I was so unfortunate as to find the gallery, for a certain time, permanently closed to the public. Professor Worsaae's brother had just died, and he had gone into the country, and I was referred to Professor Thomsen in order to obtain leave to see the museums. He was most kind and courteous, and not only gave me permission, but himself came with me. I think it may not be uninteresting to some of your readers to give from my journals the impressions conveyed by what was then a recent discovery, and the substance of the remarks of so able and specially qualified a man as Professor Thomsen upon the ethnology and peopling of the north of

Europe, as well as to signalise what I think is not very generally known—the attention which has been paid to anthropology in Denmark. The following is the entry in my journal:—

"The Professor was very civil, came with me, and explained the arrangement of the museum; it is in three divisions, representing the remains of three ages: first, aboriginal tribes of very great antiquity (he spoke of five thousand or six thousand years, at the same time saying that it might be much more) unacquainted with the use of any metal, who used implements of flint. In the first room is a large collection of their tools and weapons, not finished, but in process of manufacture, or else repaired after having been used. In another room are finished articles of peace and war; in this room was a very remarkable discovery—beds of oyster shells had been found in Jutland, and for a long time were supposed to be caused by raised beaches, but, on being cut into, were found to be composed of the shells of eaten oysters, the under shells being found in great numbers together; mixed with these are innumerable instruments of daily life, such as knives (of flint), combs, and the bones of animals which these early tribes have eaten; these are found to be extinct birds, mammals of the age of the gigantic ox, &c.—a curious fact, and a proof, as the Professor remarked, that they were very fond of marrow is, that all the bones have been opened for the purpose of extracting it. At this time, he observed, there were no inhabitants in Norway or Sweden. The next race, whose remains are quite distinct from the former, were taller, more slender, and evidently from the east; their ornaments were of gold, and their earthenware vessels more elegant in form. The ornaments of the first race were amber bracelets and necklaces of large size and uncut; a large number were found together in a morass in Jutland, evidently, the Professor remarked, the collection of some travelling merchant who traded in them. The second race prevailed till the Christian era, and Professor Thomsen believed were connected with the tribes who crossed Europe before the rise of the Roman power, perhaps akin to the Pelasgi; they knew not the use of iron, and none of their ornaments were of silver. The last were those who had the iron civilisation, and were, he believed, the first settlers in Norway and Sweden, and the progenitors of the present inhabitants."

I shall not here discuss the question of the first inhabiting of Norway and Sweden. I am inclined to doubt the fact of the Teutons being the first inhabitants. I believe the race which inhabited the northern shores of Europe to have been akin to the Laps, Fins, and Esquimaux, and the Picts or Pechts of Scotland, and to have given rise to many of the dwarf, troll, and fairy stories extant among the Sagas and elsewhere. The subject is one which, however, is still much in the realms of opinion.

I am, Sir, your obedient servant,

CHARLES H. CHAMBERS.

Miscellanea Anthropologica.

Secretion of Milk in New-born Children. By NATALIS GUILLOT.
(*Archiv. Gén. de Méd.*)

The breasts of healthy children of both sexes secrete milk immediately after birth. The function commences after the falling-off of the navel string from the seventh to the twelfth day, and ceases to flow after the lapse of a few days. The secretion is normal, and is only seen in a healthy child. The mammary glands are then perceptibly tumified. The milk may be obtained by pressure, sometimes by drops or jets. It is white, neutral, or alkaline, and becomes acid in atmospheric air. It consists of a serous and creamy portion, like women's milk, and presents, under the microscope, the same globules, containing casein, fat, and sugar. It is, in fact, a true milk. This secretion of milk in new-born children has been noticed before, but has been considered an exceptional case; hence its name in Germany, hexenmilch (witch milk). Schlossberger obtained from a boy a drachm of such milk. It consisted of 96.75 water, 0.82 fat, 0.05 ash, 2.38 casein, sugar and extracted matter. In the same paper Dr. Guillot strongly recommends the daily weighing of new-born children, which gives a positive index of their state of health. They ought to gain daily 10-15 grammes. The loss of weight frequently indicates an approaching disease.

On Longevity, with special reference to Hessen. By Dr. NEBAL, in *Zweiter Bericht der oberheiss. Gesellschaft für Natur und Heilkunde.* Giessen.

It has been computed that one in 4000 reaches 100 years. This proportion is found in the northern parts of England and Scotland, Sweden, and Norway. An example of the most advanced age is that of Patrecz Czartan at Karansebes, not far from Temeswar, in the Banat. He was born 1539, and died 1724, aged 185 years; his youngest son of his third marriage was 97. There is an instance of a more advanced age, ostensibly from an epitaph in the Leonhaud church of Linden, in which the age of Thomas Kars, died 1588, is stated to have been 207. Easten, in his *Human Longevity*, published 1799, gives 1712 instances of centenarians. Van Oven (*On the Decline of Life*) gives a list of 2000 centenarians. Among the Germans, George Wunder, born at Wülferstadt (Salzburg district) April 23, 1626, died in the hospital of Griez, December 12, 1761, aged 136 (well authenticated). Hannemann (*Ephem. nat. cur.*, 1680) mentions a man of Rostock, who died at the age of 152. Hessen has produced an older man, George Burkhard, of Wettesingen district, Zrerenberg. Winkelmann (*Beschreibung von Hessen*) says of him, that at the age of 180 he appeared in March 30, 1597, as a witness in the High Court of Marburg, and was then in full possession of his intellect. He enumerates 101 persons in and about Giessen, from 1559 to 1849, who had arrived at 100 years and upwards. John Hilcke died, aged 120, at Geismar; Joh. Casp. Drapp, aged 123, in 1715, at Petershain; Joseph Brunner, born in Treppstadt, November 26, died November 20th 1827, aged 121 years. He enjoyed a pension from the King of Bavaria.

Extracts from Leib und Seele (Body and Soul). By J. SCHALLER.
Weimar.

The question whether the races of mankind have descended from *one* couple, or from many, is, however interesting, of but small importance as regards the psychical nature of man. The difficulties which surround the former assumption are apparently insurmountable. The descent from one couple is defended chiefly on the ground that the identity of human nature is inseparably connected with that view. But this is an error. Whatever may have been the origin of mankind, it does not follow that by the separate origin of races, they are necessarily constituted different species. On the other hand, the assumption of descent from a common origin does not *à priori* enable us to form a judgment on the physical and mental capacity of the existing races. Men descended from one common stock may degenerate so, that human nature is nearly effaced in them. We may, if we please, entertain the hope that the difference of races may, in the lapse of time, by the concurrence of influences, become fainter, and finally disappear, and we connect with this hope the conviction that the lowest existing races are capable of the highest intellectual development. But we know of no probable process by which the degenerate races may return to their original healthy physical type, without which a psychical amelioration is scarcely cogitable.

Viewing the question from a scientific point, the assumption of different original stocks is supported by the pertinacity with which the various races retain, under the most different conditions, their specified forms. But we may admit such an original difference of races, without being compelled, as naturalists, to consider mankind as separable in species. In order to prove that the races are not different species, the fact is adduced that these races can interbreed, and produce fertile offspring. It is clear that the whole question becomes confused, unless we are first agreed as to the notion species. If it be maintained that only such races of animals—but these without exception—belong to the same species which can interbreed and produce again an offspring prolific between themselves, we possess apparently a sure criterion of identity of species established by nature. On account of the insufficiency of observations, this notion of species is not yet systematically established by zoology. Other characters of specific difference have therefore been sought after. In order to establish the difference of species in mankind, despite the fact that all races interbreed, the supporters of that doctrine have adduced the facts of successful interbreeding between animals considered by zoologists to belong to different species. But admitting these facts as perfectly authenticated, we might just, on account of the successful pairing, consider them as belonging to the same species despite of striking organic differences. And why should zoology hesitate to abandon, in such cases, the theory of difference of species whenever a prolific interbreeding is sufficiently established, so much the more as zoology assumes the domestic dog, though exhibiting the greatest difference in organic structure, to belong to one species, it being certain, that were there not existing in these dogs the capacity of

interbreeding, no one would hesitate to consider them as belonging to different species?

Giebel (*Hunde rasen oder Hundearten*—Dog races or dog species?) says: "Nowhere in nature, nor in the domesticated state, do we see races so much differing as the greyhound and the terrier, the poodle and the Egyptian dog, the spitz, the bulldog, the retriever, &c. These typical races of domestic dogs diverge from each other, not merely more than the species of many beasts of prey, but represent in certain characters, a great variety of carnivora." Or are we to consider the fact of prolific intercourse as not decisive with respect to identity of species? At any rate, it is somewhat hazardous to consider animals as belonging to the same species, simply on the ground of their being reproductive, though we find in their organisation such decided differences, that much less would be required to induce us, in other animals, to consider them as specifically distinct. Certainly, if we admit fertile interbreeding to be a decided criterion, an essential difficulty to separate mankind in different species is removed. The differences obtaining between the races of mankind are certainly not so trenchant that we are forced to consider them as specifically distinct. When, however, we consult systematic zoology, it cannot be denied that differences considerably less are deemed sufficient to separate animals in different species. Such is the present state of this question. We must leave it to zoologists to determine the still confused question as regards the races of mankind. We are chiefly interested in the question as regards the mental nature of man in the assumption specific differences of mankind.

We reject the theory as one-sided, that it is of no importance in what way we view the question of specific differences of mankind. The physical aspect no doubt presents itself first, but soon the psychical nature of man asserts its importance.

In viewing mankind as consisting of different species, no one has gone so far as to deny the identity of the genus humanum. With regard to the mental character of these various races, we must first consider in what consists the specific character of man in his psychical aspect. We have in a preceding chapter designated personality and free will as the specific difference between man and the brute. If we deny to any individual race this personality and free will, that is, if we assert that this or that species of mankind will never arrive, not even by the influence of other races, to a consciousness of their personal dignity, we may call such individuals *men*, but in point of fact they are not more so than incurable cretins. The possibility of meeting individual tribes, consisting of such cretin-like individuals, cannot *a priori* be denied. But we have no right to consider such a complex of beings as a particular race, and to degrade human nature to the level of the ape. . . .

No race has been found absolutely incapable of any intellectual improvement. No race has been found without any moral feeling or ideas of right and wrong, nor any who had no idea of their personality. . . . It is difficult to decide the question how far many so called savages are capable of improvement, either by their own innate power, or at least by foreign influence.
